

**Course Handout**

**TOGAF® Enterprise Architecture Practitioner**

**Training Course Materials**

**Version 1.0**

**August 2022**

*Preparation for TOGAF Enterprise Architecture Practitioner Certification*

Copyright © 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.

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 TOGAF documentation, the TOGAF documentation remains the authoritative version for certification, testing by examination, and other purposes. The official TOGAF documentation can be obtained online at [www.opengroup.org/togaf](http://www.opengroup.org/togaf).

Course Handout

**TOGAF® Enterprise Architecture Practitioner Training Course Materials**

Published by The Open Group, August 2022.

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](mailto:ogspecs@opengroup.org)

## Contents

Chapter 1	Reference Materials.....	6
1.1	Terminology: The Meaning of Architecture Compliance.....	6
1.1.1	Terminology: The Meaning of Architecture Compliance .....	6
1.1.2	Target Checklist .....	7
1.1.3	Implementation and Other Change Checklist.....	8
1.2	Stakeholder/Concern Matrix.....	10
1.2.1	Common Stakeholder Classes .....	10
1.2.2	Common Concern Classes.....	10
1.3	Architecture Development – Outputs .....	12
1.4	Implementation Governance – Phase G Inputs.....	16
1.5	Change Management – Inputs .....	17
1.6	Requirements Management Steps.....	19
1.7	TOGAF Repository .....	22
1.7.1	Architecture Landscape.....	23
1.7.2	Reference Library .....	23
1.7.3	Standards Library .....	24
1.7.4	Governance Repository .....	26
1.7.5	The Architecture Requirements Repository .....	27
1.7.6	Solutions Landscape.....	28
1.7.7	The Enterprise Repository .....	28
1.7.8	External Repositories .....	28
1.8	What to expect in a well-run Architecture Repository?.....	29
1.9	EA Landscape with an Architecture Project .....	31
1.10	Partial List of Modeling Approaches .....	32
1.11	Mapping EA Capability Development with ADM Phases .....	33
1.12	The Use of Taxonomy .....	37
1.12.1	TOGAF Enterprise Metamodel Entities .....	37
1.12.2	TOGAF Enterprise Metamodel Attributes .....	41
1.12.3	TOGAF Enterprise Metamodel Relationships.....	59
1.13	Initial Risk Assessment.....	73
Appendix A	Typical Deliverable content .....	75

# Preface

## **This Document**

This document is a handout for students studying for the TOGAF Enterprise Architecture Practitioner certification. It is provided to supplement the materials.

# Trademarks

ArchiMate®, DirecNet®, Making Standards Work®, Open O® logo, Open O and Check® Certification logo, OpenPegasus®, 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™, Dependability Through Assuredness™, Digital Practitioner Body of Knowledge™, DPBoK™, EMMM™, FACE™, the FACE™ logo, IT4IT™, the IT4IT™ logo, O-DEF™, O-HERA™, O-PAS™, Open FAIR™, Open Platform 3.0™, Open Process Automation™, Open Subsurface Data Universe™, Open Trusted Technology Provider™, Sensor Integration Simplified™, SOSA™, and the SOSA™ logo are trademarks of The Open Group.

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

# Chapter 1 Reference Materials

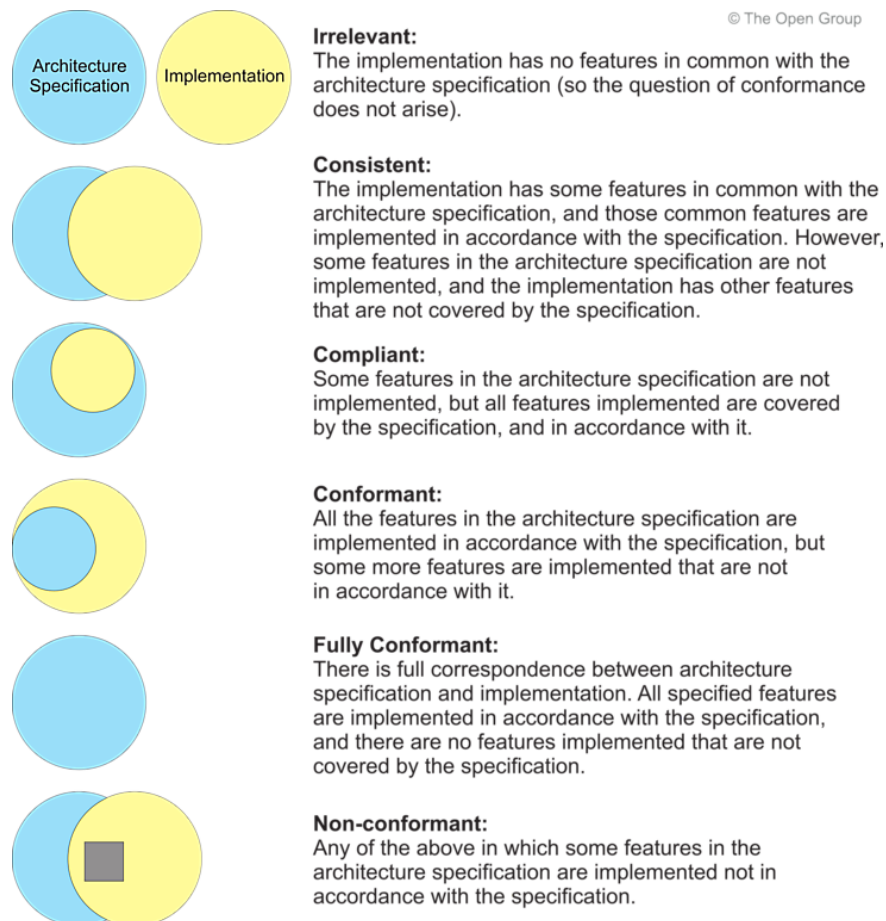
## 1.1 Terminology: The Meaning of Architecture Compliance

*(Syllabus Reference: Unit 1, Learning Outcome 1.5: You should be able to explain Architecture Compliance, levels of conformance, reviews, and the role of the architect.)*  
[KLP {S5} §6.1, 6.2 G186 §15.2.1, 15.2.2]

Note: Using the TOGAF diagram and the checklists from G186.

### 1.1.1 Terminology: The Meaning of Architecture Compliance

[KLP {S5} §6.1, 6.2]



### 1.1.2 Target Checklist

[KLP G186 §15.2.1]

Use the following checklist to execute architecture governance. Good Practitioners understand that only stakeholders can approve architecture. A good governance process will require the Practitioner to demonstrate the following when assessing a Target Architecture:

1.	Were the correct stakeholders identified?	Yes/No
		If yes, proceed.
		If no, direct the architect to engage with the stakeholders appropriate to the scope of the architecture being developed.
2.	Were constraints and guidance from the superior architecture taken into account?	Yes/No
		If yes, proceed.
		If no, direct the Practitioner to perform their job and take into account guidance and constraints from the superior architecture. Where the Practitioner identifies a conflict, obtain a recommendation on whether to grant relief from the superior architecture or enforce the superior architecture. This decision must be made by the superior architecture stakeholders.
3.	Do appropriate SMEs agree with the facts and interpretation of the facts in the architecture?	Yes/No
		If yes, proceed.
		If no, the Practitioner has to do their job and engage with the SMEs. Where the Practitioner identifies a conflict with, or between, SMEs, develop a recommendation for the stakeholders that they should have limitations in confidence.
4.	Do any constraints or guidance produced reflect the views produced for stakeholders and any underpinning architecture models and analysis?	Yes/No
		If yes, proceed.
		If no, the Practitioner needs to do their job and develop appropriate views that are consistent with analysis.
5.	Do the views produced for the stakeholders reflect their concerns and reflect any underpinning architecture models and analysis?	Yes/No
		If yes, proceed.
		If no, the Practitioner needs to do their job and develop appropriate views.
6.	Do the stakeholders understand the value, and any uncertainty	Yes/No
		If yes, proceed.

	in achieving the value, provided by reaching the target state?	If no, the Practitioner needs to do their job and develop appropriate views, and other work products, then return to the stakeholders.
7.	Do the stakeholders understand the work necessary to reach the target state and any uncertainty (risk) in successfully accomplishing the work?	Yes/No
		If yes, proceed.
		If no, the Practitioner needs to do their job and develop appropriate work products and return to the stakeholders.
8.	Do the stakeholders understand any limitations in confidence they should have in the Target Architecture?	Yes/No
		If yes, proceed.
		If no, the Practitioner needs to do their job and develop appropriate guidance on the limitations in confidence and return to the stakeholders.
9.	Have the stakeholders approved the views?	Yes/No

If the answer to the last question is yes, the governance process is done. The architecture, associated view, architecture specifications, controls, and work packages are ready for publication in the EA Repository as an approved Target Architecture.

If the answer to the last question is no, then there is a decision on whether the Practitioner should rework the architecture, or the Architecture Project should be cancelled. Reworking the architecture typically requires the Practitioner to finally embrace the stakeholder's preferences. Rework may require more advanced trade-off.

### 1.1.3 Implementation and Other Change Checklist

This checklist is designed to assist the Practitioner understand what must be demonstrated during the governance process to address a non-compliance report: This checklist is designed to assist the Practitioner understand what must be demonstrated during the governance process to address a non-compliance report:

1.	Did the organization embarking on a change reasonably interpret the Target Architecture's guidance and constraints?	Yes/No
		If yes, their interpretation should be accepted as compliance and any issues addressed through a change to the architecture. This is a key point. Good architecture can have multiple implementation choices, and the implementer is not required to adhere to opinion. If the implementation choice is a reasonable interpretation, it should be judged compliant.
		If no, proceed.



2.	Do appropriate SMEs agree with the facts and interpretation of the facts in the impact assessment?	Yes/No
		If yes, proceed.
		If no, the Practitioner has to do their job and engage with the SMEs. Where the Practitioner identifies a conflict with, or between, SMEs, develop a report for the stakeholders identifying what limitations in confidence they should have in the impact assessment.
3.	Do appropriate SMEs agree with the recommendation to enforce the target, grant time-bound relief, or change the architecture?	Yes/No
		If yes, proceed.
		If no, the Practitioner has to do their job and engage with the SMEs. Where the Practitioner identifies a conflict with, or between, SMEs, develop a report identifying what limitations in confidence the stakeholder should have in the compliance recommendation.
4.	Do the views and other materials produced for the stakeholders reflect the impact assessment and reflect any underpinning architecture models and analysis?	Yes/No
		If yes, proceed to the stakeholders for approval.
		If no, the Practitioner has to do their job.
5.	Do the stakeholders understand any limitations in confidence they should have in the impact assessment?	Yes/No
		If yes, proceed.
		If no, the Practitioner has to do their job and provide the appropriate work products that highlight the impact of limitations in confidence and return to the stakeholders.
6.	Do the stakeholders understand the impact on prior expected value, and any change in certainty in achieving the value, provided by reaching the target state?	Yes/No
		If yes, proceed.
		If no, the Practitioner has to do their job and provide the appropriate work products that highlight the impact on expected value, and on uncertainty in reaching the expected value and return to the stakeholders.
7.	Have the stakeholders approved the recommendation to enforce the target, grant relief, or change the architecture?	Yes/No

If the answer to the last questions is yes, the organization should action the recommendation. How this is actioned is context and organization-specific. Where compliance is enforced, the governance process should look for evidence of a course correction to the Implementation Project.

Lastly, where relief is provided, the Practitioner should ensure that future compliance assessment and reporting take place to review time-bound relief. Without this step, the Enterprise has simply agreed to change the Target Architecture without the bother of approval.

If the answer is no, the stakeholder has spoken. A Practitioner can make the choice to try and convince the stakeholder through expanded information provided to the stakeholder. One of the common mistakes is that the Practitioner either switched terms of assessment from those used to develop the target or failed to embrace the stakeholder's preferences when developing the impact assessment.

## 1.2 Stakeholder/Concern Matrix

*(Syllabus Reference: Unit 2, Learning Outcome 2.1: You should be able to explain how to identify stakeholders, their concerns, views, and the communication involved.) [KLP G186 §3.3.1, B]*

### 1.2.1 Common Stakeholder Classes

Senior Leaders are those with responsibility for management and oversight

This responsibility includes approving and realigning strategic initiatives, tracking a portfolio of projects, ensuring transformative benefits are realized, and meeting operational business goals.

**Program/Portfolio Managers** are those with responsibility for management and oversight of strategic initiatives

This responsibility includes approving and realigning projects, tracking project progress, and ensuring project benefits are realized.

**Business Requirements Owners** are those responsible for identifying and expressing business requirements

Typically, these stakeholders are responsible for some aspect of business operation.

**Implementers** are those responsible for developing, integrating, and deploying the solution

**Risk Owners** are those interested in risk

**Business Partners** are those who are engaged to provide services sustaining a customer value proposition

Note: The architecture may not be provided to business partners, but must be evaluated from their perspective.

**Customers** are those who consume products and services

Note: The architecture may not be provided to members, but must be evaluated from their perspective.

### 1.2.2 Common Concern Classes

**Agility:** what is the ability of the architecture to adapt to future unanticipated change?

**Efficiency:** how does some aspect of the architecture contribute to efficiency of operations?

**Differentiation:** how does some aspect of the architecture address enable differentiation?

**Value:** what is the value of the architecture?

**Value Proposition:** how does some aspect of the architecture address a value proposition?

**Change Cost:** what is the impact of a change to the architecture in terms of cost of change?

**Change Impact:** what is the impact, or scope, of a change to the architecture?

**Alignment:** to what extent is the architecture aligned with priorities?

**Feasibility:** what is the probability the architecture will be realized and sustained?

**Dependability:** how will the architecture consistently deliver value and operate safely?

**Control:** how will we protect assets in the architecture?

**Specification:** what needs to be built?

**Security:** will the architecture consistently address the risks and opportunities embedded in operations?

**Confidence:** what confidence can be placed in the target?

**Customer Intimacy:** is the Enterprise delivering products and services the customers want? What is the confidence that the new product or service will be liked by them?

**Scalability:** Can the architecture and the Enterprise handle the range of demands and growth cycles?

**Business Continuity:** Does the architecture provide the appropriate level of continuity needs relative to the Enterprise's needs?

**Table: Stakeholder Responsibility (Portfolio)**

	Agility	Efficiency	Value	Value Proposition	Change Cost	Change Impact	Alignment	Feasibility	Dependability	Control	Specification	Security	Confidence	Customer Intimacy	Scalability	Business Continuity
<b>Senior Leaders</b>	X	X		X		X	X					X		X		X
<b>Portfolio Managers</b>	X	X		X		X	X	X					X	X	X	X
<b>Business Requirements Owners</b>	X	X		X		X					X	X	X	X		
<b>Implementers</b>						X		X		X	X		X		X	
<b>Risk Owners</b>						X		X	X		X	X	X		X	
<b>Business Partner</b>	X	X				X		X			X	X	X			
<b>Customer</b>	X			X								X	X	X		X

## 1.3 Architecture Development – Outputs

*(Syllabus Reference: Unit 4 Learning Outcome 4.9: You should be able to explain the outputs of Phases B, C, and D necessary to proceed with the architecture development work.) [KLP {S1} §4.4, 6.4, 7.4, 8.4 G186 §5.2.2]*

The outputs of Phase B may include, but are not restricted to:

Refined and updated versions of the Architecture Vision phase deliverables, where applicable, including:

- Statement of Architecture Work (see the TOGAF Standard — Architecture Content), updated if necessary
- Validated business principles, business goals, and business drivers (see the TOGAF Standard — Architecture Content), updated if necessary
- Architecture Principles (see the TOGAF Standard — Architecture Content)

Draft Architecture Definition Document (see the TOGAF Standard — Architecture Content), including:

- Baseline Business Architecture, Approved, if appropriate
- Target Business Architecture, Approved, including:

- Organization structure — identifying business locations and relating them to organizational units
- Business goals and objectives — for the enterprise and each organizational unit
- Business functions — a detailed, recursive step involving successive decomposition of major functional areas into sub-functions
- Business capabilities — the abilities that a business needs to possess or exchange to achieve its goals and objectives
- Business services — the services that support the business by encapsulating a unique "elements of business behavior"; a service offered external to the enterprise may be supported by business services
- Products — output generated by the business to be offered to customers; products include materials and/or services
- Business processes, including measures and deliverables
- Business roles, including development and modification of skills requirements
- Business data model
- Correlation of organization/business functions and business capabilities — relate business capabilities to organizational units in the form of a matrix report
- Views corresponding to the selected viewpoints addressing key stakeholder concerns
- Draft Architecture Requirements Specification (see the TOGAF Standard — Architecture Content), including such Business Architecture requirements as:
  - Gap analysis results
  - Technical requirements — identifying, categorizing, and prioritizing the implications for work in the remaining architecture domains; for example, by a dependency/priority matrix (e.g., guiding trade-off between speed of transaction processing and security); list the specific models that are expected to be produced (for example, expressed as primitives of the Zachman Framework)
  - Updated business requirements
  - Business Architecture components of an Architecture Roadmap (see the TOGAF Standard — Architecture Content)

The outputs of Phase C (Data Architecture) may include, but are not restricted to:

- Refined and updated versions of the Architecture Vision phase deliverables, where applicable:

- Statement of Architecture Work (see the TOGAF Standard — Architecture Content), updated if necessary
- Validated data principles (see the TOGAF Standard — ADM Techniques), or new data principles (if generated here)
- Draft Architecture Definition Document (see the TOGAF Standard — Architecture Content), including:
  - Baseline Data Architecture, Approved, if appropriate
  - Target Data Architecture, Approved, including:
    - Business data model
    - Logical data model
    - Data management process models
    - Data Entity/Business Function matrix

Views corresponding to the selected viewpoints addressing key stakeholder concerns

- Draft Architecture Requirements Specification (see the TOGAF Standard — Architecture Content), including such Data Architecture requirements as:
  - Gap analysis results
  - Data interoperability requirements
  - Relevant technical requirements that will apply to this evolution of the architecture development cycle
  - Constraints on the Technology Architecture about to be designed
  - Updated business requirements, if appropriate
  - Updated application requirements, if appropriate
- Data Architecture components of an Architecture Roadmap (see the TOGAF Standard — Architecture Content)

The outputs of Phase C (Application Architecture) may include, but are not restricted to:

- Refined and updated versions of the Architecture Vision phase deliverables, where applicable:
  - Statement of Architecture Work (see the TOGAF Standard — Architecture Content), updated if necessary
  - Validated application principles, or new application principles (if generated here)

- Draft Architecture Definition Document (see the TOGAF Standard — Architecture Content), including:
  - Baseline Application Architecture, Approved, if appropriate
  - Target Application Architecture, Approved
  - Views corresponding to the selected viewpoints, addressing key stakeholder concerns
- Draft Architecture Requirements Specification (see the TOGAF Standard — Architecture Content), including such Application Architecture requirements as:
  - Gap analysis results
  - Applications interoperability requirements
  - Relevant technical requirements that will apply to this evolution of the architecture development cycle
  - Constraints on the Technology Architecture about to be designed
  - Updated business requirements, if appropriate
  - Updated data requirements, if appropriate
- Application Architecture components of an Architecture Roadmap (see the TOGAF Standard — Architecture Content)

The outputs of Phase D may include, but are not restricted to:

- Refined and updated versions of the Architecture Vision phase deliverables, where applicable:
  - Statement of Architecture Work (see the TOGAF Standard — Architecture Content), updated if necessary
  - Validated technology principles, or new technology principles (if generated here)
- Draft Architecture Definition Document (see the TOGAF Standard — Architecture Content), including:
  - Baseline Technology Architecture, Approved, if appropriate
  - Target Technology Architecture, Approved, including:
    - Technology Components and their relationships to information systems
    - Technology platforms and their decomposition, showing the combinations of technology required to realize a particular technology "stack"

- Environments and locations — a grouping of the required technology into computing environments (e.g., development, production)
- Expected processing load and distribution of load across technology components
- Physical (network) communications
- Hardware and network specifications
- Views corresponding to the selected viewpoints addressing key stakeholder concerns
- Draft Architecture Requirements Specification (see the TOGAF Standard — Architecture Content), including such Technology Architecture requirements as:
  - Gap analysis results
  - Requirements output from Phases B and C
  - Updated technology requirements
- Technology Architecture components of an Architecture Roadmap (see the TOGAF Standard — Architecture Content)

## 1.4 Implementation Governance – Phase G Inputs

*(Syllabus Reference: Unit 5 Learning Outcome 5.11: You should be able to explain the inputs to Phase G.) [KLP {SI} §11.2]*

This section defines the inputs to Phase G.

Reference Materials External to the Enterprise

- Architecture reference materials

Non-Architectural Inputs

- Request for Architecture Work
- Capability Assessment

Architectural Inputs

- Organizational Model for Enterprise Architecture, including:
  - Scope of organizations impacted
  - Maturity assessment, gaps, and resolution approach
  - Roles and responsibilities for architecture team(s)
  - Constraints on architecture work
  - Budget requirements



- Governance and support strategy
- Tailored Architecture Framework, including:
  - Tailored architecture method
  - Tailored architecture content (deliverables and artifacts)
  - Configured and deployed tools
- Statement of Architecture Work
- Architecture Vision
- Architecture Repository, including:
  - Re-usable building blocks
  - Publicly available reference models
  - Organization-specific reference models
  - Organization standards
- Architecture Definition Document
- Architecture Requirements Specification, including:
  - Architectural requirements
  - Gap analysis results (from Business, Data, Application, and Technology Architectures)
- Architecture Roadmap
- Architecture Governance Framework
- Implementation Governance Model
- Architecture Contract (standard)
- Request for Architecture Work identified during Phases E and F
- Implementation and Migration Plan

## 1.5 Change Management – Inputs

*(Syllabus Reference: Unit 6 Learning Outcome 6.1: You should be able to explain the inputs triggering change management: Change Requests) [KLP {S1} §12.2 G186 §14]*

Reference Materials External to the Enterprise

- Architecture reference materials (see the TOGAF Standard — Architecture Content)

Non-Architectural Inputs

- Request for Architecture Work (see the TOGAF Standard — Architecture Content)

#### Architectural Inputs

- Organizational Model for Enterprise Architecture, including:
  - Scope of organizations impacted
  - Maturity assessment, gaps, and resolution approach
  - Roles and responsibilities for architecture team(s)
  - Constraints on architecture work
  - Budget requirements
  - Governance and support strategy
- Tailored Architecture Framework, including:
  - Tailored architecture method
  - Tailored architecture content (deliverables and artifacts)
  - Configured and deployed tools
- Statement of Architecture Work
- Architecture Vision
- Architecture Repository, including:
  - Re-usable building blocks
  - Publicly available reference models
  - Organization-specific reference models
  - Organization standards
- Architecture Definition Document
- Architecture Requirements Specification, including:
  - Gap analysis results (from Business, Data, Application, and Technology Architectures)
  - Architectural requirements
- Architecture Roadmap
- Change Request — technology changes:
  - New technology reports
  - Asset management cost reduction initiatives
  - Technology withdrawal reports

- Standards initiatives
- Change Request — business changes:
  - Business developments
  - Business exceptions
  - Business innovations
  - Business technology innovations
  - Strategic change developments
- Change Request — from lessons learned
- Implementation Governance Model
- Architecture Contract (signed)
- Compliance Assessments
- Implementation and Migration Plan

## 1.6 Requirements Management Steps

*(Syllabus Reference: Unit 7 Learning Outcome 7.2: You should be able to explain the steps in the Requirements Management phase.) [KLP {S1} §13.3]*

	Requirements Management Steps	ADM Phase Steps
Step 1		Identify requirements (typically by analyzing how business goals/objectives can be met through the design of value streams, business scenarios, user experiences, or the provision of management information) and document them in the Architecture Requirements Specification and Requirements Repository.
Step 2	Establish baseline requirements: determine priorities, confirm stakeholder agreement to priorities, and document them in the Architecture Requirements Specification and Requirements Repository.	

Step 3	Monitor baseline requirements.	
Step 4		<p>Identify new and changed requirements:</p> <ul style="list-style-type: none"> <li>a. Remove or re-assess priorities</li> <li>b. Add requirements and re-assess priorities</li> <li>c. Modify existing requirements</li> </ul>
Step 5	<p>Identify changed requirements and record priorities:</p> <ul style="list-style-type: none"> <li>a. Identify changed requirements and ensure the requirements are prioritized by the architect(s) responsible for the current phase, and by the relevant stakeholders</li> <li>b. Record new priorities</li> <li>c. Ensure that any conflicts are identified and managed through the phases to a successful conclusion and prioritization</li> <li>d. Generate Requirements Impact Statement (see the TOGAF Standard — Architecture Content) for steering the architecture team</li> </ul> <p style="text-align: center;"><b>Notes</b></p> <ul style="list-style-type: none"> <li>• Changed requirements can come in through any route</li> </ul> <p style="padding-left: 40px;">To ensure that the requirements are properly assessed and prioritized, this process needs to direct the ADM phases and record the decisions related to the requirements.</p>	

	<ul style="list-style-type: none"> <li>The Requirements Management phase needs to determine stakeholder satisfaction with the decisions</li> </ul> <p>Where there is dissatisfaction, the phase remains accountable to ensure the resolution of the issues and determine next steps.</p>	
Step 6		<ol style="list-style-type: none"> <li>Assess impact of changed requirements on current (active) phase</li> <li>Assess impact of changed requirements on previous phases</li> <li>Determine whether to implement change, or defer to later ADM cycle; if decision is to implement, assess timescale for change management implementation</li> <li>Issue Requirements Impact Statement, Version <math>n+1</math></li> </ol>
Step 7		<p>Implement requirements arising from Phase H.</p> <p>The architecture can be changed through its lifecycle by the Architecture Change Management phase (Phase H). The Requirements Management process ensures that new or changing requirements that are derived from Phase H are managed accordingly.</p>
Step 8	Update the Architecture Requirements Repository with information relating to the changes requested, including stakeholder views affected.	

Step 9		Implement change in the current phase.
Step 10		<p>Assess and revise gap analysis for past phases.</p> <p>The gap analysis in the ADM Phases B through D identifies the gaps between Baseline and Target Architectures. Certain types of gap can give rise to gap requirements.</p> <p>The ADM describes two kinds of gap:</p> <ul style="list-style-type: none"> <li>• Something that is present in the baseline, but not in the target (i.e., eliminated — by accident or design)</li> <li>• Something not in the baseline, but present in the target (i.e., new)</li> </ul> <p>A "gap requirement" is anything that has been eliminated by accident, and therefore requires a change to the Target Architecture.</p> <p>If the gap analysis generates gap requirements, then this step will ensure that they are addressed, documented, and recorded in the Architecture Requirements Repository, and that the Target Architecture is revised accordingly.</p>

## 1.7 TOGAF Repository

*(Syllabus Reference: Unit 8 Learning Outcome 8.5. You should be able to describe how a repository can be structured using the TOGAF repository as an example: [KLP {S4} §7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8])*

*Architecture Landscape*

*Reference Library*

*Standards Library*

*Governance Repository*

*Architecture Requirements Repository*

### **1.7.1 Architecture Landscape**

The Architecture Landscape holds architectural views of the state of the enterprise at particular points in time. Due to the sheer volume and the diverse stakeholder needs throughout an entire enterprise, the Architecture Landscape is divided into three levels of granularity:

Strategic Architectures (see the TOGAF Standard — Architecture Development Method) show a long-term summary view of the entire enterprise. Strategic Architectures provide an organizing framework for operational and change activity and allow for direction setting at an executive level.

Segment Architectures (see the TOGAF Standard — Architecture Development Method) provide more detailed operating models for areas within an enterprise. Segment Architectures can be used at the program or portfolio level to organize and operationally align more detailed change activity.

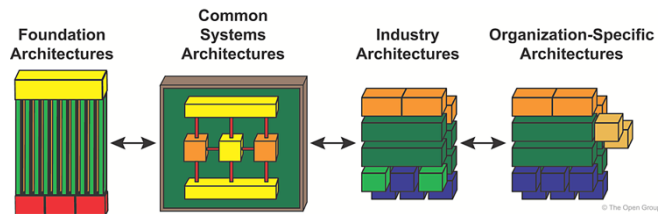
Capability Architectures (see the TOGAF Standard — Architecture Development Method) show in a more detailed fashion how the enterprise can support a particular unit of capability. Capability Architectures are used to provide an overview of current capability, target capability, and capability increments and allow for individual work packages and projects to be grouped within managed portfolios and programs.

### **1.7.2 Reference Library**

The Reference Library provides a repository to hold reference materials that should be used to develop architectures. Reference materials held may be obtained from a variety of sources, including:

- Standards bodies
- Product and service vendors
- Industry communities or forums
- Standard templates
- Enterprise best practice
- The Reference Library should contain:
  - Reference Architectures
  - Reference Models
  - Viewpoint Library
  - Templates

In order to segregate different classes of architecture reference materials, the Reference Library can use the Architecture Continuum as a method for classification.



**Figure: Architecture Continuum**

### 1.7.3 Standards Library

The Standards Library provides a repository area to hold a set of specifications, to which architectures must conform. Establishment of a Standards Library provides an unambiguous basis for Architecture Governance because:

- The standards are easily accessible to projects and therefore the obligations of the project can be understood and planned for
- Standards are stated in a clear and unambiguous manner, so that compliance can be objectively assessed

#### 1.7.3.1 Types of Standard

Standards typically fall into three classes:

- Legal and Regulatory Obligations: these standards are mandated by law and therefore an enterprise must comply or face serious consequences
- Industry Standards: these standards are established by industry bodies, such as The Open Group, and are then selected by the enterprise for adoption

Industry Standards offer potential for interoperation and sharing across enterprises, but also fall outside of the control of the enterprise and therefore must be actively monitored.

- Organizational Standards: these standards are set within the organization and are based on business aspiration (e.g., selection of standard applications to support portfolio consolidation)

Organizational Standards require processes to allow for exemptions and standards evolution.

#### 1.7.3.2 Standards Lifecycle

Standards do not generally exist for all time. New standards are identified and managed through a lifecycle process.

Typically, standards pass through the following stages:

- Proposed Standard: a potential standard has been identified for the organization, but has not yet been evaluated for adoption



- Provisional Standard (also known as a Trial Standard): a Provisional Standard has been identified as a potential standard for the organization, but has not been tried and tested to a level where its value is fully understood

Projects wishing to adopt Provisional Standards may do so, but under specific pilot conditions, so that the viability of the standard can be examined in more detail.

- Standard (also known as an Active Standard): a Standard defines a mainstream solution that should generally be used as the approach of choice
- Phasing-Out Standard (also known as a Deprecated Standard): a Phasing-Out Standard is approaching the end of its useful lifecycle

Projects that are re-using existing components can generally continue to make use of Phasing-Out Standards. Deployment of new instances of the Phasing-Out Standard is generally discouraged.

- Retired Standard (also known as an Obsolete Standard): a Retired Standard is no longer accepted as valid within the landscape

### 1.7.3.3 *Standards Classification within the Standards Library*

Standards within the Standards Library are categorized according to the building blocks within the TOGAF Enterprise Metamodel. Each metamodel entity can potentially have standards associated with it (e.g., Business Service, Technology Component).

At the top level, standards are classified in line with the TOGAF architecture domains, including the following areas:

- Business Standards:
  - Standard shared business capabilities
  - Standard role and actor definitions
  - Security and governance standards for business activity
- Data Standards:
  - Standard coding and values for data
  - Standard structures and formats for data
  - Standards for origin and ownership of data
  - Restrictions on replication and access
- Applications Standards:
  - Standard/shared applications supporting specific business functions
  - Standards for application communication and interoperation
  - Standards for access, presentation, and style
- Technology Standards;

- Standard hardware products
- Standard software products
- Standards for software development

#### 1.7.4 Governance Repository

The Governance Repository provides a repository area to hold shared information relating to the ongoing governance of projects. Maintaining a shared repository of governance information is important, because:

- Decisions made during projects (such as standards deviations or the rationale for a particular architectural approach) are important to retain and access on an ongoing basis

For example, if a system is to be replaced, having sight of the key architectural decisions that shaped the initial implementation is highly valuable as it will highlight constraints that may otherwise be obscured.

Many stakeholders are interested in the outcome of project governance (e.g., other projects, customers of the project, the Architecture Board, etc.)

##### 1.7.4.1 Contents of the Governance Repository

The Governance Repository should contain the following items:

- Decision Log: a log of all architecturally significant decisions that have been made in the organization

This would typically include:

- Product selections
- Justification for major architectural features of projects
- Standards deviations
- Standards lifecycle changes
- Change Request evaluations and approvals
- Re-use assessments

- Compliance Assessments: at key checkpoint milestones in the progress of a project, a formal architecture review will be carried out

This review will measure the compliance of the project to the defined architecture standards. For each project, this log should include:

- Project overview
- Progress overview (timeline, status, issues, risks, dependencies, etc.)
- Completed architecture checklists
- Standards compliance assessment

- Recommended actions
- Capability Assessments: depending on their objectives, some projects will carry out assessments of business, IT, or Architecture Capability

These assessments should be periodically carried out and tracked to ensure that appropriate progress is being made. This log should include:

- Templates and reference models for executing Capability Assessments
- Business Capability Assessments
- IT capability, maturity, and impact assessments
- Architecture maturity assessments
- Calendar: the Calendar should show a schedule of in-flight projects and formal review sessions to be held against these projects
- Project Portfolio: the Project Portfolio should hold summary information about all in-flight projects that fall under Architecture Governance, including:
  - The name and description of the project
  - Architectural scope of the project
  - Architectural roles and responsibilities associated with the project
- Performance Measurement: based on a charter for the architecture function, a number of performance criteria will typically be defined

## 1.7.5 The Architecture Requirements Repository

The Architecture Requirements Repository is used by all phases of the ADM to record and manage all information relevant to the architecture requirements. The requirements address the many types of architecture requirements; i.e., strategic, segment, and capability requirements which are the major drivers for the Enterprise Architecture.

Requirements can be gathered at every stage of the architecture development cycle and need to be approved through the various phases and governance processes.

The Requirements Management phase is responsible for the management of the contents of the Architecture Requirements Repository and ensuring the integrity of all requirements and their availability for access by all phases.

### 1.7.5.1 *Contents of the Architecture Requirements Repository*

The Architecture Requirements Repository holds architectural requirements of the required state of the enterprise at particular points in time. Due to the sheer volume and the diverse stakeholder needs throughout the architecture development cycle, the Architecture Requirements are divided into three levels of granularity:

- Strategic Architecture Requirements show a long-term summary view of the requirements for the entire enterprise.

Strategic Architecture Requirements identify operational and change requirements for direction setting at an executive level.

- Segment Architecture Requirements provide more detailed operating model requirements for areas within an enterprise.

Segment Architecture Requirements may identify requirements at the program or portfolio level to identify and align more detailed change activity.

- Capability Architecture Requirements identify the detailed requirements for a particular unit of capability.

Capability Architecture Requirements identify requirements for individual work packages and projects to be grouped within managed portfolios and programs.

The business outcomes for architecture requirements will be reflected in the Solutions Landscape over time. When this occurs, the architecture requirements are met and archived for audit purposes.

### **1.7.6 Solutions Landscape**

The Solutions Landscape holds the SBBs which support the ABBS specified, developed, and deployed. The building blocks may be products or services which may be categorized according to the Enterprise Continuum categorization and/or the ABB specifications as Strategic, Segment, or Capability SBBs.

SBBs may also include tools, systems, services, and information which describe the actual solutions that may be selected and their operation. For example, vendor-specific reference models or vendor-specific Levels 4 and 5 of the IT4IT Reference Architecture would be defined here.

However, the Solutions Landscape will not include the information and data content produced by the solutions selected; that is the responsibility of the solutions themselves.

### **1.7.7 The Enterprise Repository**

While the Architecture Repository holds information concerning the Enterprise Architecture and associated specifications and artifacts, there are a considerable number of enterprise repositories that support the architecture both inside and outside of the enterprise.

These can include development repositories, specific operating environments, instructions, and configuration management repositories.

### **1.7.8 External Repositories**

#### **1.7.8.1 External Reference Models**

There are many industry reference models available which may assist in understanding the role of and developing the reference architectures.

#### **1.7.8.2 External Standards**

These relate to industry, best practice, or formal defined standards used by leading organizations. Examples include ISO, IEEE, and Government standards.

### 1.7.8.3 Architecture Board Approvals

Decisions made by the Architecture Board which affect the Enterprise Architecture are often recorded in the minutes of meetings. These minutes are often held in documentation archives which are excluded from the Architecture Repository for legal or regulatory reasons.

## 1.8 What to expect in a well-run Architecture Repository?

*(Syllabus Reference: Unit 8 Learning Outcome 8.6: You should be able to explain what to expect in a well-run Architecture Repository.) [KLP G186 §5.1]*

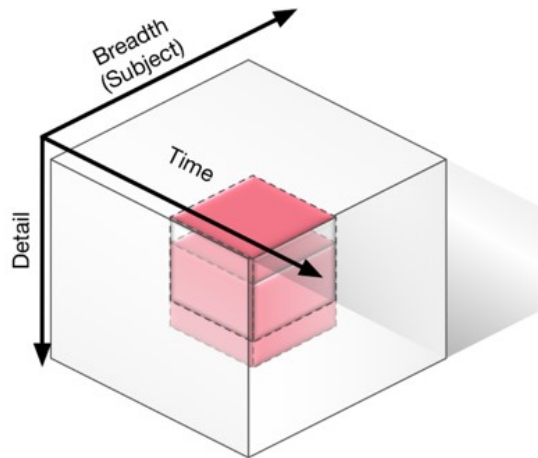
**Table: Partial List of Work Product Alignment with Key Processes**

Practice Supports	Architecture to Support Strategy	Architecture to Support Portfolio	Architecture to Support Project	Architecture to Support Solution Delivery
<b>Phase A Work Product: Vision</b>	Key deliverable Before framing of a strategic planning session Refresh before initiation of program budgeting	Key deliverable Before start of budget planning	Often not used Activity to produce a vision overlaps with portfolio/program candidate architecture and roadmap Technique may be used at initiation of business case	Limited use Primary use is early in implementation cycle (via internal providers or execution partners)
<b>Phase E Work Product: Candidate Architecture</b>	During strategic planning session Refresh as required in program budgeting	Key deliverable Before start of budget planning Primary use is stakeholder acceptance of target and definition of gap	Before project initiation and finalization of business case Primary use is creation of Architecture Requirements Specification	Before engagement of execution partners (including internal providers) Primary use is creation of Architecture Requirements Specification
<b>Roadmap</b>	During strategic planning session Refresh as required in program budgeting	Before start of budget planning Refresh as required to support budgeting and program management	Limited use Can be used as an input to projects with multiple interactive changes	Before engagement of execution partners (including internal providers) Primary use is identification of required change, and preferences of how to execute change, to manage solution delivery partner selection and engagement

<b>Practice Supports</b>	<b>Architecture to Support Strategy</b>	<b>Architecture to Support Portfolio</b>	<b>Architecture to Support Project</b>	<b>Architecture to Support Solution Delivery</b>
<b>Phase F Work Product: Architecture Contract &amp; Architecture Requirements Specification</b>	Likely not used	Limited use	Key deliverable Before completion of project initiation	Key deliverable Before engagement and contracting
<b>Implementation &amp; Migration Plan</b>	Likely not used	During portfolio budgeting  Refresh as required to support budgeting and program management	Key deliverable Before project start	Key deliverable Before engagement and contracting
<b>Phase G Work Product: Conformance Assessment</b>	Likely not used	Likely not used	Key deliverable At key points in project that allow reporting to stakeholders and obtaining decisions for non-conformance	Key deliverable At key points in project that allow reporting to stakeholders and obtaining decisions for non-conformance
<b>Phase H Work Product: Value Assessment</b>	Before governance review, framing a strategic planning session and program budget	Key deliverable Before governance review and program budgeting  Refresh as required to support program management	Limited use Scope of significant architecture change and value often does not cleanly align to projects	Limited use Scope of significant architecture change and value often does not cleanly align to solution deployment

## 1.9 EA Landscape with an Architecture Project

*(Syllabus Reference: Unit 8 Learning Outcome 8.9: You should be able to explain at which level an architecture is being developed and the associated level of detail expected.) [KLP {S3} §3.2 G186 §3.2.1]*



Looking at the figure, the essential point is that the Architecture Project covers a specific portion of the EA Landscape – the portion defined regarding breadth, planning horizon, and detail. Prior work may already exist within the scope. The example does not cover the least or the most detailed layers, nor all time periods nor subjects. Rather the example addresses a specific portion of the landscape. The example Architecture Project will populate, or refresh, a portion of the EA Landscape. Because there is higher-level work, all work in the Architecture Project will be subject to the superior architecture. The example stops at a level of detail so the Practitioner will need to constrain the level of detail. Lastly, the example is within the total planning horizon of the Enterprise and will be constrained by what can and must be done within the planning horizon.

Complicating our lives, the superior architecture may exist either as an unrealized target, unrealized transition, or a realized current state. It must always be kept in mind that where there is not an explicit change in superior architecture, the current state probably remains valid. Lastly, this Architecture Project is a subset of the potential breadth of the scope of the EA Landscape. TTM is a key feature of useful architecture; Practitioners must stick to the scope (breadth, time, detail) of what they have been asked. Work outside the scope may be interesting, potentially even needed in the future, but is not within the scope of this architecture initiative.

The energy and efficacy of an EA team is diluted when it tries to be in every conversation by trying to do too much. The construct of a TOGAF Request for Architecture Work as the entry to Phase A exists to bound the current Architecture Project. The Request for Architecture Work tells the EA team that, within the context of the existing EA Landscape, its Enterprise is looking for a Target Architecture addressing a specific set of subjects at a necessary level of detail that can be accomplished within a particular planning horizon. A substantive output of the Architecture Project is to populate, replace, or reaffirm the contents of the EA Landscape. When stakeholders accept the target, all further EA work, change planning, and change execution are governed by the approved architecture.

## 1.10 Partial List of Modeling Approaches

(Syllabus Reference: Unit 8 Learning Outcome 8.15: You should be able to explain the need for a content metamodel/modeling and how it relates to the ACF.) [ KLP {S4} §1.2 G186 A]

**Table: List of Useful Modeling Methods**

Reference Model & Reference Architecture	Use
4+1 architectural view model <sup>1</sup>	Can be used in Architecture to Support Solution Delivery. The four views of the model are logical, development, process, physical view, and use-case.  Provides a nice simplified list of what you need to know and describe.
The ArchiMate Standard	Excellent fit for Architecture to Support Solution Delivery.  Good fit for Architecture to Support Project.
Business Model Canvas <sup>2</sup>	Use is entirely driven by the scope of the value proposition.  Commonly used for Architecture to Support Portfolio and Architecture to Support Project.
Business Motivation Model (BMM) <sup>3</sup>	Simplified is useful for Architecture to Support Project.  Can be used for Architecture to Support Portfolio BMCs.
Business Process Model and Notation (BPMN) <sup>4</sup>	Can be used for Architecture to Support Solution Delivery.  Limited fit for analysis required in architecture.

---

<sup>1</sup> Refer to Kruchten: Architectural Blueprints – The “4+1” View Model of Software Architecture (see [Referenced Documents](#)).

<sup>2</sup> See: <http://businessmodelgeneration.com/canvas/bmc>.

<sup>3</sup> See [www.omg.org/spec/BMM/Current/](http://www.omg.org/spec/BMM/Current/).

<sup>4</sup> See [www.omg.org/spec/BPMN/2.0/](http://www.omg.org/spec/BPMN/2.0/).



Reference Model & Reference Architecture	Use
Kaplan Strategy Map <sup>5</sup>	Good for representing final strategy.
Organigraphic	Very useful in looking at a governance model of an Enterprise. Use is driven by the scope being described.  Commonly used for Architecture to Support Portfolio and Architecture to Support Project.
A3 Thinking <sup>6</sup>	Useful in summarizing Architecture to Support Project.
Unified Modeling Language (UML) <sup>7</sup>	Good fit for Architecture to Support Solution Delivery.  In particular, useful in providing a standard way to visualize the design of a system.

## 1.11 Mapping EA Capability Development with ADM Phases

*(Syllabus Reference: Unit 8 Learning Outcome 8.17: You should be able to explain when the ACF needs to be filled throughout the ADM cycles.) [KLP {S4} §1.3 G186 E]*

The following table is from the TOGAF® Leader's Guide to Establishing and Evolving an EA Capability. It outlines a customized journey through the TOGAF ADM that is optimized for an EA Capability; it is easily adapted to other capability-based planning Architecture Projects.

As always, Practitioners identify the information they need to know to answer the question at hand. These answers either inform the next question and/or support a decision. Effective iteration of the ADM is not linear.

---

<sup>5</sup> Refer to Kaplan and David: The Balanced Scorecard (see [Referenced Documents](#)).

<sup>6</sup> See <http://sloanreview.mit.edu/article/toyotas-secret-the-a3-report/>.

<sup>7</sup> See [www.omg.org/spec/UML/2.5](http://www.omg.org/spec/UML/2.5).

**Table: Mapping EA Capability Development with EA Phases**

Topic	Mapping to TOGAF ADM Phase
Enterprise Context and EA Context	<p>Partial Strategic Level Phase B</p> <p>Enterprise context:</p> <ul style="list-style-type: none"> <li>• Goals, objectives, initiatives, competitive, and tactic analysis</li> <li>• Operating model (partners, suppliers)</li> <li>• Explore what-if scenarios and scorecards</li> </ul> <p>EA context specific for the EA Capability:</p> <ul style="list-style-type: none"> <li>• Goals</li> </ul>
Business Objectives for the EA Capability	<p>Capability Level Phase A</p> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• Provide initial goals and objectives</li> <li>• Select a reference EA Capability and maturity model</li> <li>• Candidate EA Capability</li> <li>• Candidate operating model</li> <li>• EA Capability gap and priority roadmap</li> </ul>
Architecture Governance	<p>Partial Segment/Capability Level Phase B</p> <p>For the Enterprise:</p> <ul style="list-style-type: none"> <li>• Enterprise Risk Management Model</li> <li>• Governance Model</li> </ul> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• Risk Management Model</li> <li>• Governance Model</li> <li>• Extend candidate operating model to include EA governance</li> <li>• Initial Architecture Partition Model</li> <li>• Trace to EA Capability goals</li> </ul>

Topic	Mapping to TOGAF ADM Phase
Alignment with Other Frameworks	<p>Partial Capability Level Phase B &amp; Partial Phase C (Data)</p> <p>For the Enterprise:</p> <ul style="list-style-type: none"> <li>• Reference models for key frameworks</li> <li>• Capability assessment of key frameworks</li> </ul> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• Framework touch-points</li> <li>• Extend candidate operating model to include other frameworks</li> <li>• Extend EA governance and EA risk management</li> <li>• Initial EA Content Framework aligned to other frameworks and EA governance</li> <li>• Candidate architecture partition model</li> <li>• Trace to EA Capability goals</li> <li>• EA Capability and key framework gap and priority roadmap</li> </ul>
Customization of Architecture Contents and Metamodel	<p>Capability Level Phase C (Data)</p> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• EA Content Framework</li> <li>• EA Content Metamodel</li> <li>• Viewpoint Library</li> <li>• Architecture Repository Model</li> <li>• Trace to EA Capability goals</li> <li>• Initial EA Content Framework and Architecture Repository gap</li> </ul>
Organization Model for the EA Team	<p>Partial Capability Level Phase B</p> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• EA organizational model</li> <li>• Select reference EA skills framework</li> <li>• Initial alignment with Enterprise job titles and roles</li> <li>• Initial accountability matrix for EA Content Framework and initial Architecture Repository</li> <li>• Organizational gap and priority roadmap</li> </ul>

Topic	Mapping to TOGAF ADM Phase
Process Model	<p>Partial Capability Level Phase B</p> <p>Capability Level Phase C (App) and Capability Level Phase D</p> <p>For the Enterprise:</p> <ul style="list-style-type: none"> <li>• Process model highlighting touch-points between EA Capability and Enterprise processes the EA Capability supports<sup>8</sup></li> <li>• Performance matrix for key processes and organization</li> <li>• Accountability matrix for EA Content Framework and organization</li> </ul> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• Process model</li> <li>• Architecture Repository application model</li> <li>• Matrix for EA Content Framework and Architecture Repository Applications Architecture</li> <li>• Process and Architecture Repository gap and priority roadmap</li> </ul>
Create the EA Capability	<p>Capability Level Phase E</p> <p>Create a roadmap highlighting development of the EA Capability by changes in the:</p> <ul style="list-style-type: none"> <li>• Organizational model</li> <li>• Process model</li> <li>• EA Content Framework</li> <li>• Architecture Repository</li> </ul> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• Trace roadmap to EA Capability goals</li> </ul>
Establishing and Evolving the EA Capability	<p>Capability Level Phase F and Capability Level Phase G</p> <p>For the Enterprise:</p> <ul style="list-style-type: none"> <li>• Transition the EA Capability Roadmap to an Implementation &amp; Migration Plan</li> </ul> <p>For the EA Capability:</p> <ul style="list-style-type: none"> <li>• Execute the Implementation &amp; Migration Plan to build the EA Capability the Enterprise desires</li> </ul>

---

<sup>8</sup> While this has been stressed in the guide, align to processes the EA Capability is expected to support based upon its purpose. Do not align to those it could support. Worst practice is to fret over linkage to processes the EA Capability *could* support.

## 1.12 The Use of Taxonomy

(Syllabus Reference: Unit 8 Learning Outcome 8.18: You should be able to explain the use of a taxonomy.) [KLP {S4} 2.4, 2.5,2.6 G184 §8.3]

### 1.12.1 TOGAF Enterprise Metamodel Entities

Metamodel Entity	Description
Actor	A person, organization, or system that has a role that initiates or interacts with activities; for example, a sales representative who travels to visit customers. Actors may be internal or external to an organization. In the automotive industry, an original equipment manufacturer would be considered an actor by an automotive dealership that interacts with its supply chain activities.
Application Service	The automated elements of a business service. An application service may deliver or support part or all of one or more business services.
Assumption	A statement of probable fact that has not been fully validated at this stage, due to external constraints. For example, it may be assumed that an existing application will support a certain set of functional requirements, although those requirements may not yet have been individually validated.
Business Capability	A particular ability that a business may possess or exchange to achieve a particular purpose.
Business Information	Represents a concept and its semantics used within the business.
Business Service	Supports the business by encapsulating a unique element of business behavior; a service offered external to the enterprise may be supported by business services.
Capability	<p>An ability that an organization, person, or system possesses.</p> <p><b>Note:</b> This a general-purpose definition. See <i>Business Capability</i> for how this concept is refined for usage in Business Architecture.</p>

Constraint	An external factor that prevents an organization from pursuing particular approaches to meet its goals. For example, customer data is not harmonized within the organization, regionally or nationally, constraining the organization's ability to offer effective customer service.
Contract	An agreement between a consumer and a provider that establishes functional and non-functional parameters for interaction. This applies to all types of service interactions within the metamodel.
Control	A decision-making step with accompanying decision logic used to determine execution approach for a process or to ensure that a process complies with governance criteria. For example, a sign-off control on the purchase request processing process that checks whether the total value of the request is within the sign-off limits of the requester, or whether it needs escalating to higher authority.
Course of Action	Direction and focus provided by strategic goals and objectives, often to deliver the value proposition characterized in the business model.
Data Entity	Represents data that is recognized by the business as a distinct concept.
Driver	An external or internal condition that motivates the organization to define its goals. An example of an external driver is a change in regulation or compliance rules which, for example, require changes to the way an organization operates; i.e., Sarbanes-Oxley in the US.
Event	An organizational state change that triggers processing events; may originate from inside or outside the organization and may be resolved inside or outside the organization.
Function	A set of business behaviors based on a chosen set of criteria. Functions are usually close-coupled to/with organizational units.

Gap	A statement of difference between two states. Used in the context of gap analysis, where the difference between the Baseline and Target Architecture is identified.
Goal	A high-level statement of intent or direction for an organization. Typically used to measure success of an organization.
Location	A place where activities occur. Locations can be composed and decomposed.
Logical Application Component	An encapsulation of application functionality that is definable by services offered and data maintained, independently of implementation and technology.
Logical Data Component	A data structure composed of logically-related data entities.
Logical Technology Component	An implementation-independent encapsulation of technology services.
Measure	An indicator or factor that can be tracked, usually on an ongoing basis, to determine success or alignment with objectives and goals.
Objective	An organizational aim that is declared in a Simple, Measurable, Actionable, Realistic, and Timebound (SMART) way. For example, "Increase capacity utilization by 30% by the end of the year, to support the planned increase in market share".
Organization Unit	A self-contained unit of resources with goals, objectives, and measures. Organization units may include external parties and business partner organizations.
Physical Application Component	A realization of logical application functionality using components of functionality in applications that may be hired, procured, or built.

Physical Data Component	A data structure that realizes related logical data components represented in the format or schema required by a particular technology.
Physical Technology Component	A realization of logical technology functionality using a particular technology product that may be deployed.
Principle	A qualitative statement of intent that should be met by the architecture. It has at least a supporting rationale and a measure of importance.
Process	<p>A process represents a sequence of activities that together achieve a specified outcome, can be decomposed into sub-processes, and can show operation of a business capability or service (at next level of detail).</p> <p>Processes may also be used to link organizations, business capabilities, services, and processes. A process may realize one service and/or orchestrate subordinate services.</p>
Product	An outcome generated by the business to be offered to customers. Products include materials and/or services.
Requirement	A quantitative statement of business need that must be met by a particular architecture or work package.
Role	<p>The usual or expected behavior of an actor, or the part somebody or something plays in a particular process or event. An actor may have a number of roles.</p> <p>See also <i>Actor</i>.</p>
Service Quality	A configuration of non-functional requirements or attributes that may be assigned to a business, application, or technology service.
Technology Service	A technical capability required to provide enabling infrastructure that supports the delivery of applications.



Value Stream	A representation of an end-to-end collection of activities that create an overall result for a customer, stakeholder, or end-user.
Work Package	A set of actions identified to achieve one or more objectives for the business. A work package can be a part of a project, a complete project, or a program.

### 1.12.2 TOGAF Enterprise Metamodel Attributes

Metamodel		
Entity	Attribute	Description
All Metamodel Entities	ID	Unique identifier for the architecture entity.
	Name	Brief name of the architecture entity.
	Description	Textual description of the architecture entity.
	Category	User-definable categorization taxonomy for each metamodel entity.
	Source	Location from where the information was collected.
	Owner	Owner of the architecture entity.
Capability	Business value	Describes how this capability provides value to the enterprise.

	Increments	Lists possible maturity/quality levels for the capability.
Constraint	No additional attributes	This metamodel entity has only basic attributes.
Gap	No additional attributes	This metamodel entity has only basic attributes.
Location	Category	The following categories of Location apply: Region (applies to a grouping of countries or territory; e.g., South East Asia, UK, and Ireland), Country (applies to a single country; e.g., US), Building (applies to a site of operation; where several offices are collected in a single city, this category may represent a city), and Specific Location (applies to any specific location within a building, such as a server room). The nature of the business may introduce other Locations: Ship or Port for a ferry company, Mine for a gold company, Car for a police force, Hotel for any firm's traveling workers, and so on.
Principle	Category	The following categories of principle apply: Guiding Principle, Business Principle, Data Principle, Application Principle, Integration Principle, Technology Principle.
	Priority	Priority of this principle relative to other principles.
	Statement of principle	Statement of what the principle is.

	Rationale	Statement of why the principle is required and the desired outcome to be reached.
	Implication	Statement of what the principle means in practical terms.
	Metric	Identifies mechanisms that will be used to measure whether the principle has been met or not.
Requirement	Statement of requirement	Statement of what the requirement is, including a definition of whether the requirement shall be met, should be met, or may be met.
	Rationale	Statement of why the requirement exists.
	Acceptance criteria	The parameters that will be fulfilled if the requirement is being met, together with the tests that will be carried out to assess the state of the parameters.
Actor	# FTEs	Estimated number of FTEs that operate as this actor.
	Actor goal	Objectives that this actor has, in general terms.
	Actor tasks	Tasks that this actor performs, in general terms.

Business Service	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the business service is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
Contract	Behavior characteristics	Functional behavior to be supported within the scope of the contract.
	Service name "caller"	Consuming service.
	Service name "called"	Providing service.
	Service quality characteristics	Non-functional behavior to be supported within the scope of the contract.
	Availability characteristics	Degree to which something is available for use.

	Service times	Hours during which the service must be available.
	Manageability characteristics	Ability to gather information about the state of something and control it.
	Serviceability characteristics	Ability to identify problems and take corrective action, such as to repair or upgrade a component in a running system.
	Performance characteristics	Ability of a component to perform its tasks in an appropriate time.
	Response requirements	Response times that the service provider must meet for particular operations.
	Reliability characteristics	Resistance to failure.
	Quality of information required	Contracted requirements on accuracy and completeness of information.
	Contract control requirements	Level of governance and enforcement applied to the contractual parameters for overall service.
	Result control requirements	Measures in place to ensure that each service request meets contracted criteria.
	Recoverability characteristics	Ability to restore a system to a working state after an interruption.

	Locatability characteristics	Ability of a system to be found when needed.
	Security characteristics	Ability of a system to prevent unauthorized access to functions and data.
	Privacy characteristics	Protection of data from unauthorized access.
	Integrity characteristics	Ability of a system to ensure that data has not been corrupted.
	Credibility characteristics	Ability of a system to ensure that the service request originates from an authorized source.
	Localization characteristics	Ability of a service to support localized variants for different consumer groups.
	Internationalization characteristics	Ability of a service to support international variations in business logic and data representation (such as character set).
	Interoperability characteristics	Ability of the service to interoperate with different technical environments, inside and outside of the organization.
	Scalability characteristics	Ability of the service to grow or shrink its performance or capacity appropriately to the demands of the environment in which it operates.

	Portability characteristics	Of data, people, applications, and components.
	Extensibility characteristics	Ability to accept new functionality.
	Capacity characteristics	Contracted capacity of the service provider to meet requests.
	Throughput	Required throughput capacity.
	Throughput period	Time period needed to deliver throughput capacity.
	Growth	Expected future growth rate of service request.
	Growth period	Time period needed to reach the expected growth rate.
	Peak profile short term	Short-term profile of peak service traffic.
	Peak profile long term	Long-term profile of peak service traffic.
Control	No additional attributes	This metamodel entity has only basic attributes.
Driver	No additional attributes	This metamodel entity has only basic attributes.

Event	No additional attributes	This metamodel entity has only basic attributes.
Function	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
Goal	No additional attributes	This metamodel entity has only basic attributes.
Measure	No additional attributes	This metamodel entity has only basic attributes.
Objective	No additional attributes	This metamodel entity has only basic attributes.
Organization Unit	Headcount	Number of FTEs working within the organization.



Process	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
	Process criticality	Criticality of this process to business operations.
	Manual or automated	Whether this process is supported by IT or is a manual process.
	Process volumetrics	Data on frequency of process execution.
Product	No additional attributes	This metamodel entity has only basic attributes.
Role	Estimated number of FTEs that operate in this Role	This metamodel entity has only basic attributes.

Service Quality	No additional attributes	This metamodel entity has only basic attributes.
Service	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
Application Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.

	Retire date	Date when the standard was/will be retired.
Application Service	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
Logical Application Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.

	Retire date	Date when the standard was/will be retired.
Physical Application Component	Lifecycle status	Proposed, In Development, Live, Phasing Out, Retired.
	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
	Initial live date	Date when the first release of the application was/will be released into production.
	Date of last release	Date when the last release of the application was released into production.

	Date of next release	Date when the next release of the application will be released into production.
	Retirement date	Date when the application was/will be retired.
	Availability characteristics	Degree to which something is available for use.
	Service times	Hours during which the application must be available.
	Manageability characteristics	Ability to gather information about the state of something and control it.
	Serviceability characteristics	Ability to identify problems and take corrective action, such as to repair or upgrade a component in a running system.
	Performance characteristics	Ability of a component to perform its tasks in an appropriate time.
	Reliability characteristics	Resistance to failure.
	Recoverability characteristics	Ability to restore a system to a working state after an interruption.
	Locatability characteristics	Ability of a system to be found when needed.

	Security characteristics	Ability of a system to prevent unauthorized access to functions and data.
	Privacy characteristics	Protection of data from unauthorized access.
	Integrity characteristics	Ability of a system to ensure that data has not been corrupted.
	Credibility characteristics	Ability of a system to ensure that the service request originates from an authorized source.
	Localization characteristics	Ability of a service to support localized variants for different consumer groups.
	Internationalization characteristics	Ability of a service to support international variations in business logic and data representation (such as character set).
	Interoperability characteristics	Ability of the service to interoperate with different technical environments, inside and outside of the organization.
	Scalability characteristics	Ability of the service to grow or shrink its performance or capacity appropriately to the demands of the environment in which it operates.
	Portability characteristics	Of data, people, applications, and components.

	Extensibility characteristics	Ability to accept new functionality.
	Capacity characteristics	Contracted capacity of the service provider to meet requests.
	Throughput	Required throughput capacity.
	Throughput period	Time period needed to deliver throughput capacity.
	Growth	Expected future growth rate of service request.
	Growth period	Time period needed to reach the expected growth rate.
	Peak profile short term	Short-term profile of peak service traffic.
	Peak profile long term	Long-term profile of peak service traffic.
Data Entity	Category	The following categories of data entity apply: Message, Internally Stored Entity.
	Privacy classification	Level of restriction placed on access to the data.
	Retention classification	Level of retention to be placed on the data.

Logical Data Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
Physical Data Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.



Logical Technology Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.
	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
	Category	Logical Technology Components are categorized according to the defined taxonomy (such as the TOGAF Technical Reference Model (TRM)), adapted to meet the needs of an individual organization.
Physical Technology Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Standard creation date	If the product is a standard, when the standard was created.
	Last standard review date	Last date that the standard was reviewed.

	Next standard review date	Next date for the standard to be reviewed.
	Retire date	Date when the standard was/will be retired.
	Category	Physical Technology Components are categorized according to the defined taxonomy (such as the TOGAF TRM), adapted to meet the needs of an individual organization.
	Product name	Name of the product making up the technology component.
	Module name	Module, or other sub-product, name making up the technology component.
	Vendor	Vendor providing the technology component.
	Version	Version of the product making up the technology component.
Technology Service	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
	Category	Technology Services are categorized according to the defined taxonomy (such as the TOGAF TRM), adapted to meet the needs of an individual organization.

Business Capability	No additional attributes	This metamodel entity has only basic attributes.
Technology Component	Standards class	Non-Standard, Proposed Standard, Provisional Standard, Standard, Phasing-Out Standard, Retired Standard.
Course of Action	No additional attributes	This metamodel entity has only basic attributes.
Value Stream	No additional attributes	This metamodel entity has only basic attributes.
Work Package	Category	The following categories of work package apply: Work Package, Work Stream, Project, Program, Portfolio.
	Capability delivered	Describes the contribution this work package makes to capability delivery.

### 1.12.3 TOGAF Enterprise Metamodel Relationships

Source Entity	Target Entity	Name
Actor	Actor	Decomposes
Actor	Business Service	Consumes
Actor	Data Entity	Supplies or consumes

Actor	Event	Generates
Actor	Event	Resolves
Actor	Function	Interacts with
Actor	Function	Performs
Actor	Organization Unit	Belongs to
Actor	Process	Participates in
Actor	Process	Triggers
Actor	Role	Performs task in
Actor	Value Stream	Performs a task in
Application Service	Business Service	Automates some or all of
Application Service	Data Entity	Used by
Application Service	Logical Application Component	Is realized through

Application Service	Technology Service	Is served by
Business Capability	Business Information	Uses
Business Capability	Course of Action	Is influenced by
Business Capability	Function	Is delivered by
Business Capability	Organization Unit	Is used by
Business Capability	Process	Is operationalized by
Business Capability	Value Stream	Enables
Business Information	Business Capability	Is used by
Business Information	Business Service	Used to derive
Business Information	Course of Action	Is influenced by
Business Information	Data Entity	Is realized by

Business Information	Process	Uses
Business Service	Actor	Is provided to
Business Service	Application Service	Uses
Business Service	Business Information	Is derived from
Business Service	Business Service Quality	Meets
Business Service	Business Service	Consumes
Business Service	Business Service	Decomposes
Business Service	Contract	Is governed and measured by
Business Service	Data Entity	Is accessed and updated through
Business Service	Event	Resolves
Business Service	Function	Provides governed interface to access

Business Service	Logical Technology Component	Is implemented on
Business Service	Organization Unit	Is owned and governed by
Business Service	Process	Is realized by
Business Service	Process	Supports
Capability	Work Package	Is delivered by
Contract	Business Service	Governs, measures
Contract	Service Quality	Meets
Control	Process	Ensures correct operation of
Course of Action	Business Capability	Influences
Course of Action	Business Information	Influences
Course of Action	Function	Influences
Course of Action	Goal	Realizes

Course of Action	Organization Unit	Influences
Course of Action	Product	Influences
Course of Action	Value Stream	Influences
Data Entity	Actor	Is supplied or consumed by
Data Entity	Application Service	Used by
Data Entity	Business Information	Realizes
Data Entity	Business Service	Is accessed and updated through
Data Entity	Data Entity	Decomposes
Data Entity	Data Entity	Relates to
Data Entity	Logical Data Component	Resides within
Driver	Driver	Decomposes
Driver	Goal	Creates



Driver	Organization Unit	Motivates
Event	Actor	Is generated by
Event	Actor	Is resolved by
Event	Business Service	Is resolved by
Event	Process	Is generated by
Event	Process	Is resolved by
Function	Actor	Supports
Function	Business Capability	Delivers
Function	Business Service	Is bounded by
Function	Course of Action	Is influenced by
Function	Function	Communicates with
Function	Function	Decomposes
Function	Organization Unit	Is owned by
Function	Process	Orchestrates

Function	Process	Decomposes
Goal	Course of Action	Is realized by
Goal	Driver	Addresses
Goal	Goal	Decomposes
Goal	Objective	Is made specific
Logical Application Component	Application Service	Implements
Logical Application Component	Logical Application Component	Decomposes
Logical Application Component	Logical Application Component	Communicates with
Logical Application Component	Logical Data Component	Used by
Logical Application Component	Logical Technology Component	Is served by

Logical Application Component	Physical Application Component	Is realized by
Logical Data Component	Data Entity	Encapsulates
Logical Data Component	Logical Application Component	Uses
Logical Data Component	Physical Data Component	Is realized by
Logical Technology Component	Business Service	Provides platform for
Logical Technology Component	Logical Application Component	Serves
Logical Technology Component	Logical Technology Component	Decomposes
Logical Technology Component	Logical Technology Component	Is dependent on
Logical Technology Component	Physical Technology Component	Is realized by

Logical Technology Component	Technology Service	Supplies
Measure	Measure	Decomposes
Measure	Objective	Sets performance criteria for
Objective	Goal	Realizes
Objective	Measure	Is tracked against
Objective	Objective	Decomposes
Organization Unit	Actor	Contains
Organization Unit	Business Capability	Delivers
Organization Unit	Business Service	Owns and governs
Organization Unit	Course of Action	Participates in
Organization Unit	Driver	Is motivated by
Organization Unit	Function	Enables
Organization Unit	Organization Unit	Decomposes

Organization Unit	Product	Delivers
Physical Application Component	Logical Application Component	Realizes
Physical Application Component	Physical Application Component	Decomposes
Physical Application Component	Physical Application Component	Communicates with
Physical Application Component	Physical Data Component	Used by
Physical Application Component	Physical Technology Component	Is served by
Physical Data Component	Logical Data Component	Realizes
Physical Data Component	Physical Application Component	Used by
Physical Data Component	Physical Data Component	Decomposes

Physical Technology Component	Logical Technology Component	Realizes
Physical Technology Component	Physical Application Component	Serves
Physical Technology Component	Physical Technology Component	Decomposes
Physical Technology Component	Physical Technology Component	Is dependent on
Process	Actor	Is produced by
Process	Actor	Supports
Process	Business Capability	Operationalizes
Process	Business Information	Is used by
Process	Business Service	Orchestrates
Process	Business Service	Decomposes
Process	Control	Is guided by

Process	Event	Generates
Process	Event	Resolves
Process	Function	Supports
Process	Function	Is realized by
Process	Process	Decomposes
Process	Process	Precedes, follows
Process	Product	Delivers
Process	Role	Involves
Process	Role	Is performed by
Process	Value Stream	Operationalizes
Product	Course of Action	Is produced by
Product	Organization Unit	Is produced by
Product	Process	Is produced by
Role	Actor	Is performed by

Role	Process	Participates in
Role	Process	Performs
Role	Role	Decomposes
Service Quality	Contract	Applies to
Service Quality	Service	Applies to
Technology Service	Application Service	Serves
Technology Service	Logical Technology Component	Is supplied by
Value Stream	Actor	Involves
Value Stream	Actor	Is triggered by
Value Stream	Business Capability	Is enabled by
Value Stream	Course of Action	Is influenced by
Value Stream	Process	Is operationalized by
Work Package	Capability	Delivers



## 1.13 Initial Risk Assessment

(Syllabus Reference: Unit 8 Learning Outcome 8.19: You should be able to explain how risk assessment can be used.) [KLP {S2} §9.4 G152 §3.2.1, 5.3.4, 5.6.1, 5.7]

Corporate Risk Impact Assessment					
Effect	Frequency				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

© The Open Group

There are no hard and fast rules with respect to measuring effect and frequency. The following guidelines are based upon existing risk management best practices.

Effect could be assessed using the following example criteria:

- **Catastrophic** infers critical financial loss that could result in bankruptcy of the organization
- **Critical** infers serious financial loss in more than one line of business leading to a loss in productivity and no return on investment on the IT investment
- **Marginal** infers a minor financial loss in a line of business and a reduced return on investment on the IT investment
- **Negligible** infers a minimal impact on a line of business' ability to deliver services and/or products

Frequency could be indicated as follows:

- **Frequent:** likely to occur very often and/or continuously
- **Likely:** occurs several times over the course of a transformation cycle
- **Occasional:** occurs sporadically
- **Seldom:** remotely possible and would probably occur not more than once in the course of a transformation cycle
- **Unlikely:** will probably not occur during the course of a transformation cycle

Combining the two factors to infer impact would be conducted using a heuristically-based but consistent classification scheme for the risks. A potential scheme to assess corporate impact could be as follows:

- **Extremely High Risk (E):** the transformation effort will most likely fail with severe consequences
- **High Risk (H):** significant failure of parts of the transformation effort resulting in certain goals not being achieved
- **Moderate Risk (M):** noticeable failure of parts of the transformation effort threatening the success of certain goals
- **Low Risk (L):** certain goals will not be wholly successful

## Appendix A                      Typical Deliverable content

The purpose of this appendix is to show candidates the content of typical deliverables produced and consumed during the TOGAF ADM.

<b>Architecture Building Blocks (ABB)</b>
Fundamental functionality and attributes: semantic, unambiguous, including security capability and manageability Interfaces: chosen set, supplied Interoperability and relationship with other building blocks Dependent building blocks with required functionality and named user interfaces Map to business/organizational entities and policies
<b>Architecture Contract</b>
Typical contents of an Architecture Design and Development Contract are:  Introduction and background The nature of the agreement Scope of the architecture Architecture and strategic principles and requirements Conformance requirements Architecture development and management process and roles Target Architecture measures Defined phases of deliverables Prioritized joint workplan Time window(s) Architecture delivery and business metrics
Typical contents of a Business Users' Architecture Contract are:  Introduction and background The nature of the agreement Scope Strategic requirements Conformance requirements Architecture adopters Time window Architecture business metrics Service architecture (includes Service-Level Agreement (SLA))

<b>Architecture Definition Document</b> <ul style="list-style-type: none"> <li>• Scope</li> <li>• Goals, objectives, and constraints</li> <li>• Architecture Principles</li> <li>• Baseline Architecture</li> <li>• Architecture models (for each state to be modeled): <ul style="list-style-type: none"> <li>○ Business Architecture models</li> <li>○ Data Architecture models</li> <li>○ Application Architecture models</li> <li>○ Technology Architecture models</li> </ul> </li> <li>• Rationale and justification for architectural approach</li> <li>• Mapping to Architecture Repository: <ul style="list-style-type: none"> <li>○ Mapping to Architecture Landscape</li> <li>○ Mapping to reference models</li> <li>○ Mapping to standards</li> <li>○ Re-use assessment</li> </ul> </li> <li>• Gap analysis</li> <li>• Impact assessment</li> <li>• Transition Architecture: <ul style="list-style-type: none"> <li>○ Definition of transition states</li> <li>○ Business Architecture for each transition state</li> <li>○ Data Architecture for each transition state</li> <li>○ Application Architecture for each transition state</li> <li>○ Technology Architecture for each transition state</li> </ul> </li> </ul>
<b>Architecture Principle</b> <p>Statement:</p> <p>Rationale:</p> <p>Implications:</p>
<b>Architecture Repository</b> <p>Success measures</p> <p>Architecture requirements</p> <p>Business service contracts</p> <p>Application service contracts</p> <p>Implementation guidelines</p> <p>Implementation specifications</p> <p>Implementation standards</p> <p>Interoperability requirements</p> <p>IT Service Management requirements</p> <p>Constraints</p> <p>Assumptions</p>

<b>Architecture Requirements Specification</b>
<p>Success measures</p> <p>Architecture requirements</p> <p>Business service contracts</p> <p>Application service contracts</p> <p>Implementation guidelines</p> <p>Implementation specifications</p> <p>Implementation standards</p> <p>Interoperability requirements</p> <p>IT Service Management requirements</p> <p>Constraints</p> <p>Assumptions</p>
<b>Architecture Roadmap</b>
<ul style="list-style-type: none"> <li>• Work package portfolio: <ul style="list-style-type: none"> <li>○ Work package description (name, description, objectives, deliverables)</li> <li>○ Functional requirements</li> <li>○ Dependencies</li> <li>○ Relationship to opportunity</li> <li>○ Relationship to Architecture Definition Document and Architecture Requirements Specification</li> <li>○ Business value</li> </ul> </li> <li>• Implementation Factor catalog, including: <ul style="list-style-type: none"> <li>○ Risks</li> <li>○ Issues</li> <li>○ Assumptions</li> <li>○ Dependencies</li> <li>○ Actions</li> <li>○ Inputs</li> </ul> </li> <li>• Consolidated Gaps, Solutions, and Dependencies matrix, including: <ul style="list-style-type: none"> <li>○ Architecture domain</li> <li>○ Gap</li> <li>○ Potential solutions</li> <li>○ Dependencies</li> </ul> </li> <li>• Any Transition Architectures</li> <li>• Implementation recommendations: <ul style="list-style-type: none"> <li>○ Criteria measures of effectiveness of projects</li> <li>○ Risks and issues</li> <li>○ Solution Building Blocks</li> </ul> </li> </ul>
<b>Architecture Vision</b>
<ul style="list-style-type: none"> <li>• Problem description: <ul style="list-style-type: none"> <li>○ Stakeholders and their concerns</li> <li>○ List of issues/scenarios to be addressed</li> </ul> </li> <li>• Objective of the Statement of Architecture Work</li> </ul>

- Summary views necessary for the Request for Architecture Work and the Draft Business, Data, Application, and Technology Architectures created; typically including:
  - Value Chain diagram
  - Solution Concept diagram
- Mapped requirements
- Reference to Draft Architecture Definition Document

### Capability Assessment

- Business Capability Assessment, including:
  - Capabilities of the business
  - Baseline state assessment of the performance level of each capability
  - Future state aspiration for the performance level of each capability
  - Baseline state assessment of how each capability is realized
  - Future state aspiration for how each capability should be realized
  - Assessment of likely impacts to the business organization resulting from the successful deployment of the Target Architecture
- IT Capability Assessment, including:
  - Baseline and target maturity level of change process
  - Baseline and target maturity level of operational processes
  - Baseline capability and capacity assessment
  - Assessment of the likely impacts to the IT organization resulting from the successful deployment of the Target Architecture

### Change Request

- Description of the proposed change
- Rationale for the proposed change
- Impact assessment of the proposed change, including:
  - Reference to specific requirements
  - Stakeholder priority of the requirements to date
  - Phases to be revisited
  - Phase to lead on requirements prioritization
  - Results of phase investigations and revised priorities
  - Recommendations on management of requirements
- Repository reference number

### Communication Plan

Identification of stakeholders and grouping by communication requirements

Identification of communication needs, key messages in relation to the Architecture Vision, communication risks, and CSFs

Identification of mechanisms that will be used to communicate with stakeholders and allow access to architecture information, such as meetings, newsletters, repositories, etc.

Identification of a communications timetable, showing which communications will occur with which stakeholder groups at what time and in what location

<b>Implementation and Migration Plan</b>
<ul style="list-style-type: none"> <li>• Implementation and Migration Strategy: <ul style="list-style-type: none"> <li>○ Strategic implementation direction</li> <li>○ Implementation sequencing approach</li> </ul> </li> <li>• Project and portfolio breakdown of implementation: <ul style="list-style-type: none"> <li>○ Allocation of work packages to project and portfolio</li> <li>○ Capabilities delivered by projects</li> <li>○ Milestones and timing</li> <li>○ Work breakdown structure</li> <li>○ May include impact on existing portfolio, program, and projects</li> </ul> </li> </ul>

<b>Implementation Governance Model</b>
<p>Governance processes</p> <p>Governance organization structure</p> <p>Governance roles and responsibilities</p> <p>Governance checkpoints and success/failure criteria</p>

<b>Request for Architecture Work</b>
<p>Organization sponsors</p> <p>Organization's mission statement</p> <p>Business goals (and changes)</p> <p>Strategic plans of the business</p> <p>Time limits</p> <p>Changes in the business environment</p> <p>Organizational constraints</p> <p>Budget information, financial constraints</p> <p>External constraints, business constraints</p> <p>Current business system description</p> <p>Current architecture/IT system description</p> <p>Description of developing organization</p> <p>Description of resources available to developing organization</p>

<b>Requirements Impact Assessment</b>
<p>Reference to specific requirements</p> <p>Stakeholder priority of the requirements to date</p> <p>Phases to be revisited</p> <p>Phase to lead on requirements prioritization</p> <p>Results of phase investigations and revised priorities</p> <p>Recommendations on management of requirements</p> <p>Repository reference number</p>

<b>Statement for Architecture Work</b>
<p>Title</p> <p>Architecture project request and background</p> <p>Architecture project description and scope</p>

<p>Overview of Architecture Vision</p> <p>Specific change of scope procedures</p> <p>Roles, responsibilities, and deliverables</p> <p>Acceptance criteria and procedures</p> <p>Architecture project plan and schedule</p> <p>Approvals</p>
---



## Appendix B Deliverables

The TOGAF Content Framework (see 1. Introduction) identifies deliverables that are produced as outputs from executing the ADM cycle and potentially consumed as inputs at other points in the ADM. Other deliverables may be produced elsewhere and consumed by the ADM.

Deliverables produced by executing the ADM are shown in the table below.

Deliverable	Output from...	Input to...
Architecture Building Blocks	F, H	A, B, C, D, E
Architecture Contract	G	G, H
Architecture Definition Document	A, B, C, D, E, F	B, C, D, E, F, G, H
Architecture Principles	Preliminary, A, B, C, D	Preliminary, A, B, C, D, E, F, G, H
Architecture Repository	Preliminary	Preliminary, A, B, C, D, E, F, G, H, Requirements Management
Architecture Requirements	B, C, D, E, F, Requirements Management	C, D, Requirements Management
Architecture Roadmap	B, C, D, E, F	B, C, D, E, F
Architecture Vision	A, E	B, C, D, E, F, G, H, Requirements Management
Business Principles, Business Goals, and Business Drivers	Preliminary, A, B	A, B
Capability Assessment	A, E	B, C, D, E, F
Change Request	F, G, H	—
Communications Plan	A	B, C, D, E, F
Compliance Assessment	G	H
Implementation and Migration Plan	E, F	F

Implementation Governance Model	F	G, H
Organizational Model for Enterprise	Preliminary	Preliminary, A, B, C, D, E, F, G, H, Requirements Management
Request for Architecture Work	Preliminary, F, H	A, G
Requirements Impact Assessment	Requirements Management	Requirements Management
Solution Building Blocks	G	A, B, C, D, E, F, G
Statement of Architecture Work	A, B, C, D, E, F, G, H	B, C, D, E, F, G, H, Requirements Management
Tailored Architecture Framework	Preliminary, A	Preliminary, A, B, C, D, E, F, G, H, Requirements Management