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Module 28
ADM Architecture Requirements Management

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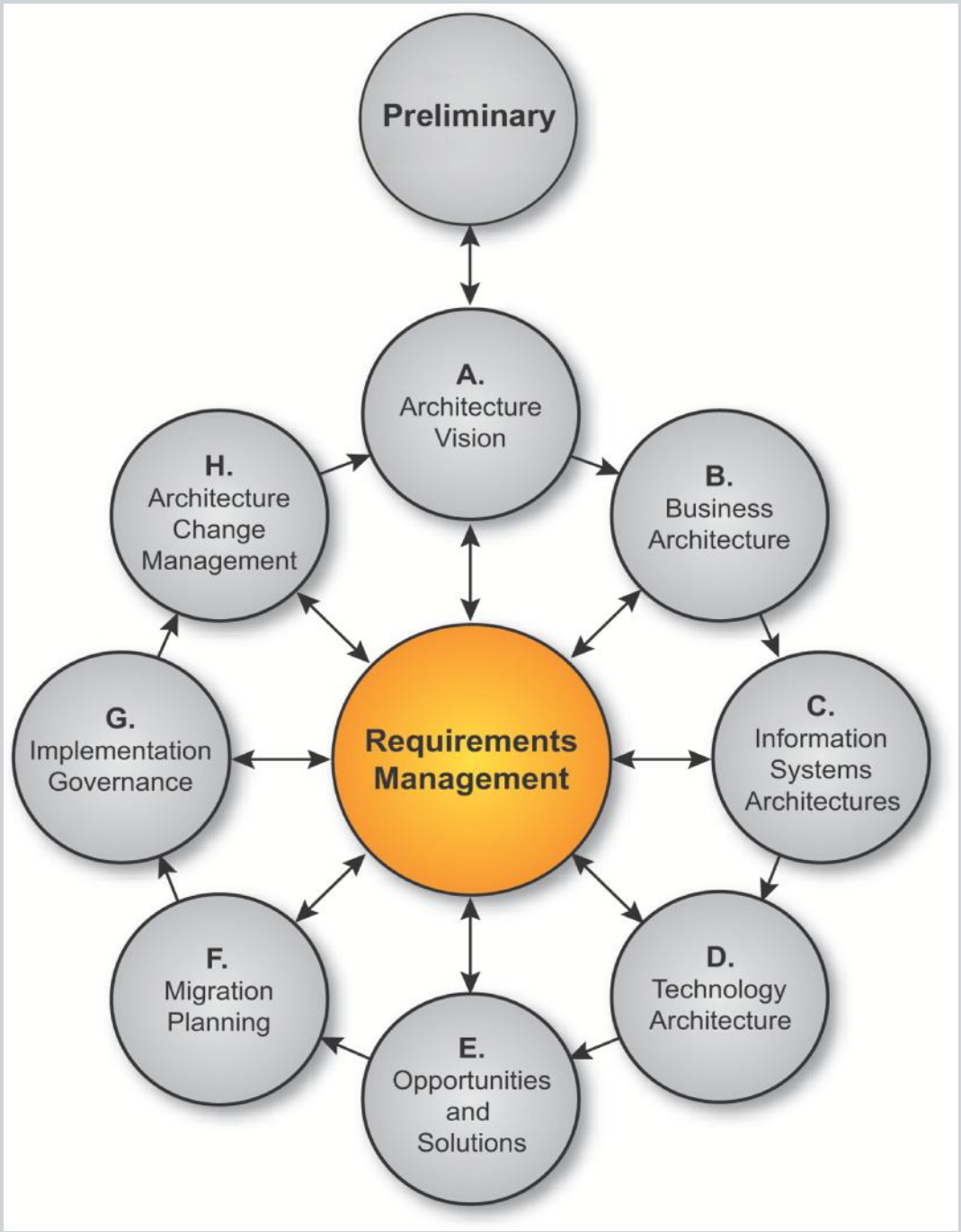

ADM Architecture Requirements Management

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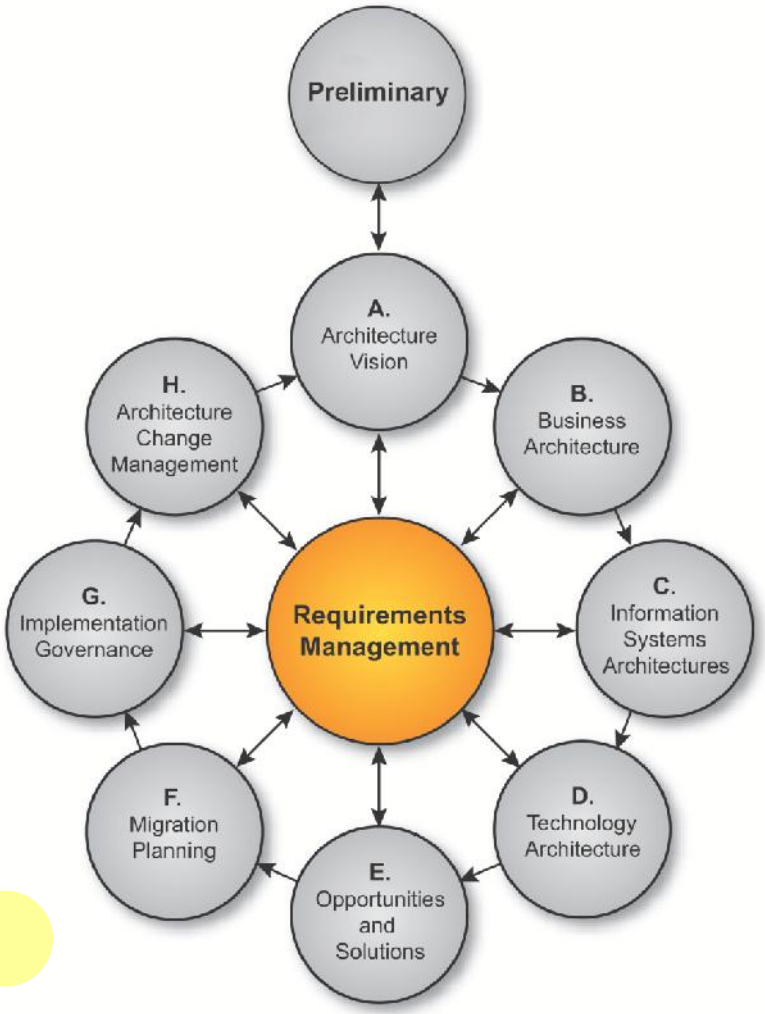
Module Objectives

The objectives of this module are to understand:

- The process of managing Architecture Requirements during application of the ADM
- What it consists of
- What inputs are needed for it
- What the outputs are

ADM Requirements Management



The process of managing architecture requirements:

- Applies to all phases of the ADM cycle
- Is central to the ADM process
- Is a dynamic process addressing the identification of requirements, their storage and delivery to the phases

Objectives

- Ensure that the Requirements Management process is sustained and operates for all relevant ADM phases
- Manage architecture requirements identified during any execution of the ADM cycle or a phase
- Ensure that the relevant architecture requirements are available for use by each phase as the phase is executed

Approach

- The ability to deal with changes in the requirements is crucial to the ADM process since architecture deals with uncertainty and change
- Architecture bridges the divide between the aspirations of the stakeholders and a practical solution.
- The Requirements Management process does not dispose of, address or prioritize requirements; this is done within the phases of the ADM.
- It is recommended that a Requirements Repository is used to record and manage all architecture requirements

Requirements Development

- The first high level requirements are developed in the Architecture Vision
- For each ADM phase, from Preliminary to Phase H
  - Select the approved requirements for that phase as held in the Requirements Repository and Architecture Requirements Specification
  - At the completion of a phase the status of all such requirements needs to be updated
- During phase execution
  - New requirements generated for future architecture work within the scope of the current Statement of Architecture Work need to be documented within the Architecture Requirements Specification
  - New requirements which are outside of the scope of the current Statement of Architecture Work must be input to the Requirements Repository for management through the Requirements Management process

Sample Requirements

- The system/product must capture the following data about a customer: name, address, phone number…
- The system/product must automatically pass the customer's phone number to the call centre agent receiving the call
- The system/product should make an audible sound whenever a new email is received

...

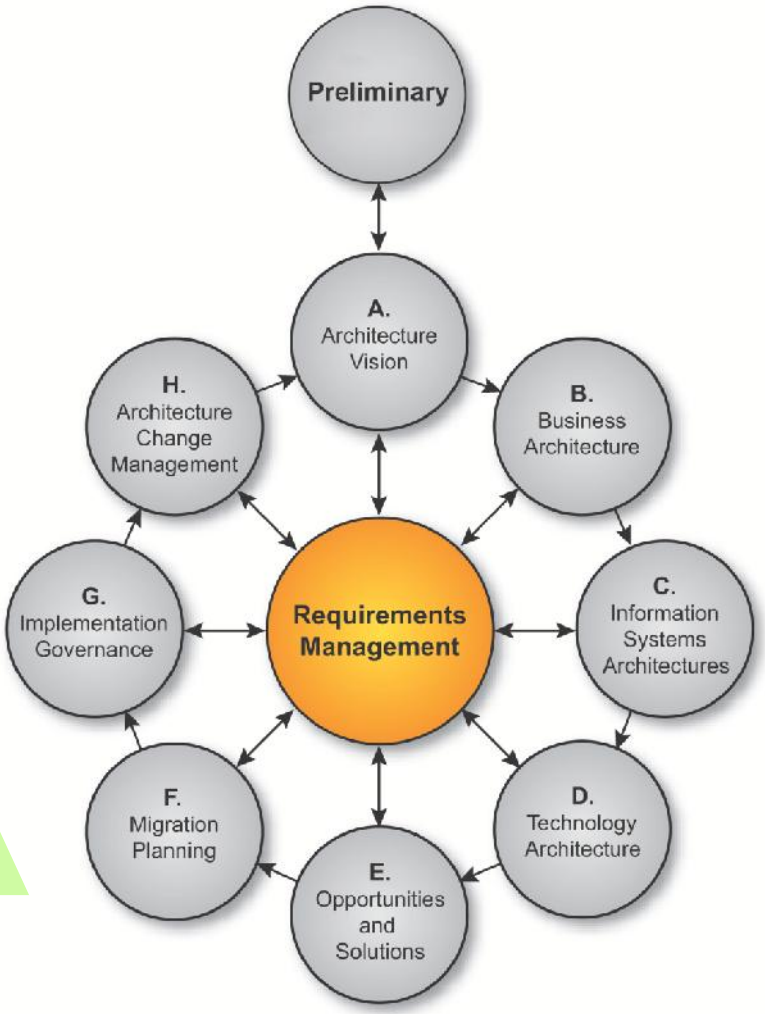
Resources

- TOGAF specifies generic needs for requirements, not specific tools or processes
- It recommends use of
  - Business Scenarios
  - Commercial off the shelf tools

Volère Requirements Specification Template

- This is an example of a suitable requirements template
- **The "Waiting Room"**
  - This is a repository for requirements that are beyond the planned scope, or the time available, for the current iteration. Having the ability to store future requirements helps avoid the perception that they are simply being discarded, while at the same time helping to manage expectations about what will be delivered.

Requirements Management: Inputs



- Requirements-related outputs from each ADM phase.
- The first high-level requirements are produced as part of the Architecture Vision.
- Each architecture domain then generates detailed requirements.
- Deliverables in later ADM phases contain mappings to new types of requirements

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Steps Overview

Requirements Management Steps

2. Baseline requirements
3. Monitor baseline requirements

5. Identify changed requirement and record priorities

8. Update the Requirements Repository with information relating to the changes requested, including stakeholder views affected

ADM Phase Steps

1. Identify/document requirements

4. Identify changed requirement

6. Assess impact of change
7. Implement changes arising from Phase H
9. Implement change in the current phase
10. Assess and revise gap analysis for past phases

Steps in Detail

1. Identify/document requirements *(ADM Phase Step)*
   - Use Business Scenarios or an equivalent technique
2. Baseline requirements *(Requirements Management Step)*
   1. Determine priorities arising from current phase of ADM
   2. Confirm stakeholder buy-in to resultant priorities
   3. Record requirements priorities and place in Requirements Repository.
3. Monitor baseline requirements *(Requirements Management Step)*

Steps in Detail

4. Identify changed requirement *(ADM Phase Step)*
   1. Remove or re-assess priorities
   2. Add requirements and re-assess priorities
   3. Modify existing requirements
5. Identify changed requirements and record priorities

   (Requirements Management Step)
   1. Identify changed requirements and ensure the requirements are prioritized by the architects and the stakeholders
   2. Record new priorities
   3. Ensure that any conflicts are identified and managed through the phases to a successful conclusion and prioritization
   4. Generate Requirements Impact Statement for steering the architecture team

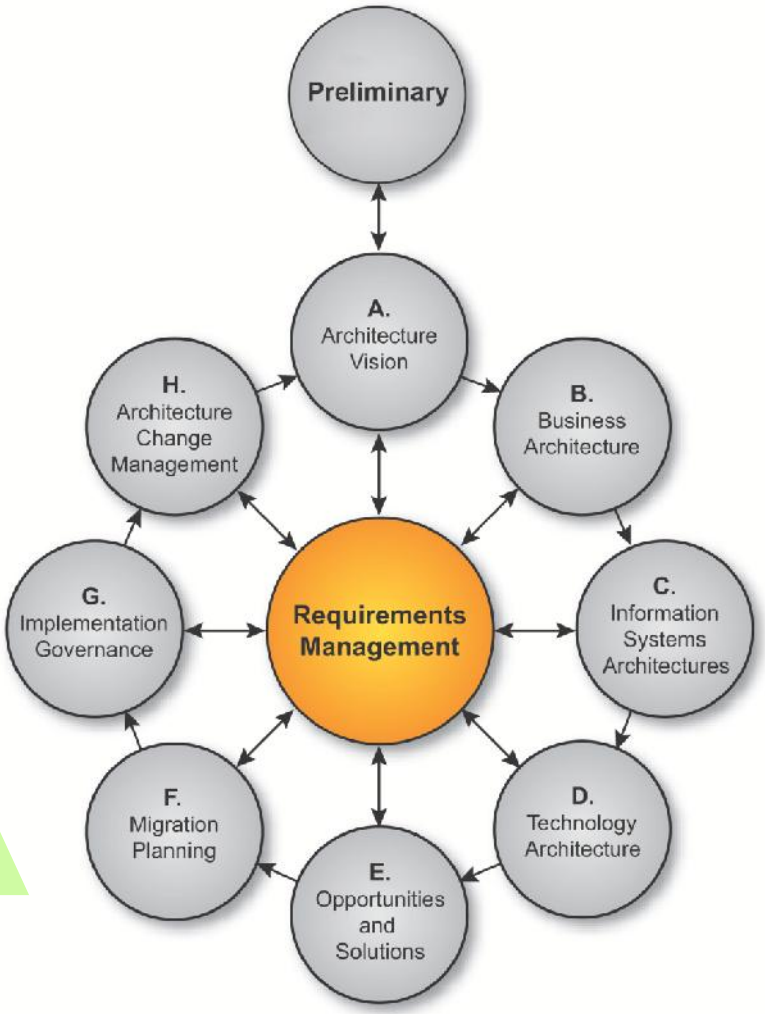
Steps in Detail

6. Assess impact of changed requirements on *(ADM Phase Step)*
   1. Current phase
   2. Previous phases
   3. Decide whether to:
      - Implement change (requires schedule for change management implementation)
      - Defer to future ADM cycle
   4. Issue new version of Requirements Impact Statement
7. Implement requirements arising from Phase H (Architecture Change Management) *(ADM Phase Step)*
   - The architecture can be changed through its lifecycle by Phase H. The Requirements Management process ensures that new or changing requirements are managed accordingly

Steps in Detail

8. Update the Requirements Repository with information relating to the changes requested, including stakeholder views affected *(Requirements Management Step)*
9. Implement change in the current phase *(ADM Phase Step)*
10. Assess and revise gap analysis for past phases *(ADM Phase Step)*
    - If the gap analysis generates gap requirements, then this step will ensure that they are addressed, documented, and recorded in the requirements repository, and that the Target Architecture is revised accordingly.

Requirements Management: Outputs



- Updated Architecture Requirements Specification
- Requirements Impact Statement

Requirements Impact Assessment

- When new requirements arise, or existing ones are changed, a Requirements Impact Statement is generated
- It identifies the phases of the ADM that need to be revisited to address the changes
- The statement goes through various iterations until the final version, which includes the full implications of the requirements (e.g., costs, timescales, and business metrics) on the architecture development
- Once requirements for the current ADM cycle have been finalized then the Architecture Requirements Specification should be updated

Example forms of words for Requirements

Note that the force of these words is modified by the requirement level of the document in which they are used:

*1. **MUST** This word, or the terms "**REQUIRED**" or "**SHALL**", mean that the definition is an absolute requirement of the specification.*

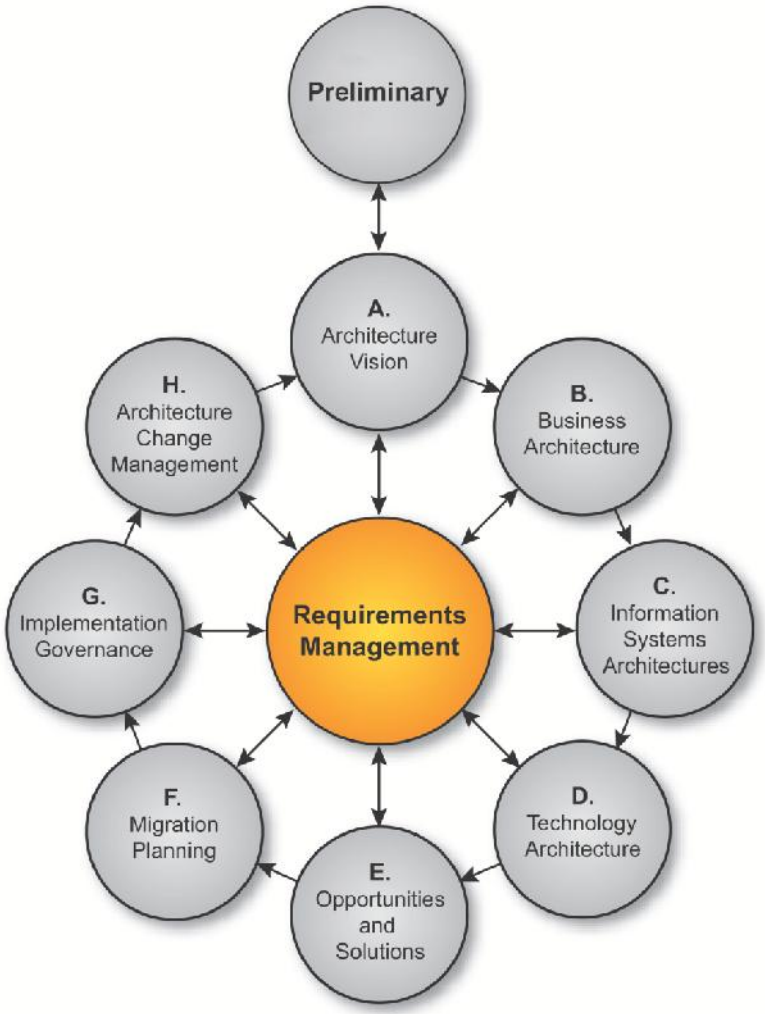
*2. **MUST NOT** This phrase, or the phrase "**SHALL NOT**", mean that the definition is an absolute prohibition of the specification.*

*3. **SHOULD** This word, or the adjective "**RECOMMENDED**", mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.*

*4. **SHOULD NOT** This phrase, or the phrase "**NOT RECOMMENDED**" mean that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.*

*5. **MAY** This word, or the adjective "**OPTIONAL**", mean that an item is truly optional.*

Summary



- Requirements Management is an ongoing activity of the ADM.
- The Requirements Repository contains the current requirements for the Target Architecture.
- When new requirements arise, or existing ones are changed, a Requirements Impact Statement is generated that identifies the phase of the ADM to be revisited. This goes through various iterations until a final version is produced.

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Summary

Requirements Management			
Objectives	**Steps**	**Inputs**	**Outputs**
Ensure that the Requirements Management process is sustained and operates for all relevant ADM phases Manage architecture requirements identified during any execution of the ADM cycle or a phase Ensure that relevant architecture requirements are available for use by each phase as the phase is executed	Identify/document requirements Baseline requirements Monitor baseline requirements Identify changed requirement; remove, add, modify, and re-assess priorities Identify changed requirement and record priorities; identify and resolve conflicts; generate Requirements Impact Statements Assess impact of changed requirements on current and previous ADM phases Implement requirements arising from Phase H Update the requirements repository Implement change in the current phase Assess and revise gap analysis for past phases	The inputs to the Requirements Management process are the requirements-related outputs from each ADM phase. The first high-level requirements are produced as part of the Architecture Vision. Each architecture domain then generates detailed requirements. Deliverables in later ADM phases contain mappings to new types of requirements (for example, conformance requirements).	Changed requirements Requirements Impact Assessment, which identifies the phases of the ADM that need to be revisited to address any changes. The final version must include the full implications of the requirements (e.g., costs, timescales, and business metrics).

Test Yourself Question

Q. Which of the following is not a resource recommended for Requirements Management?

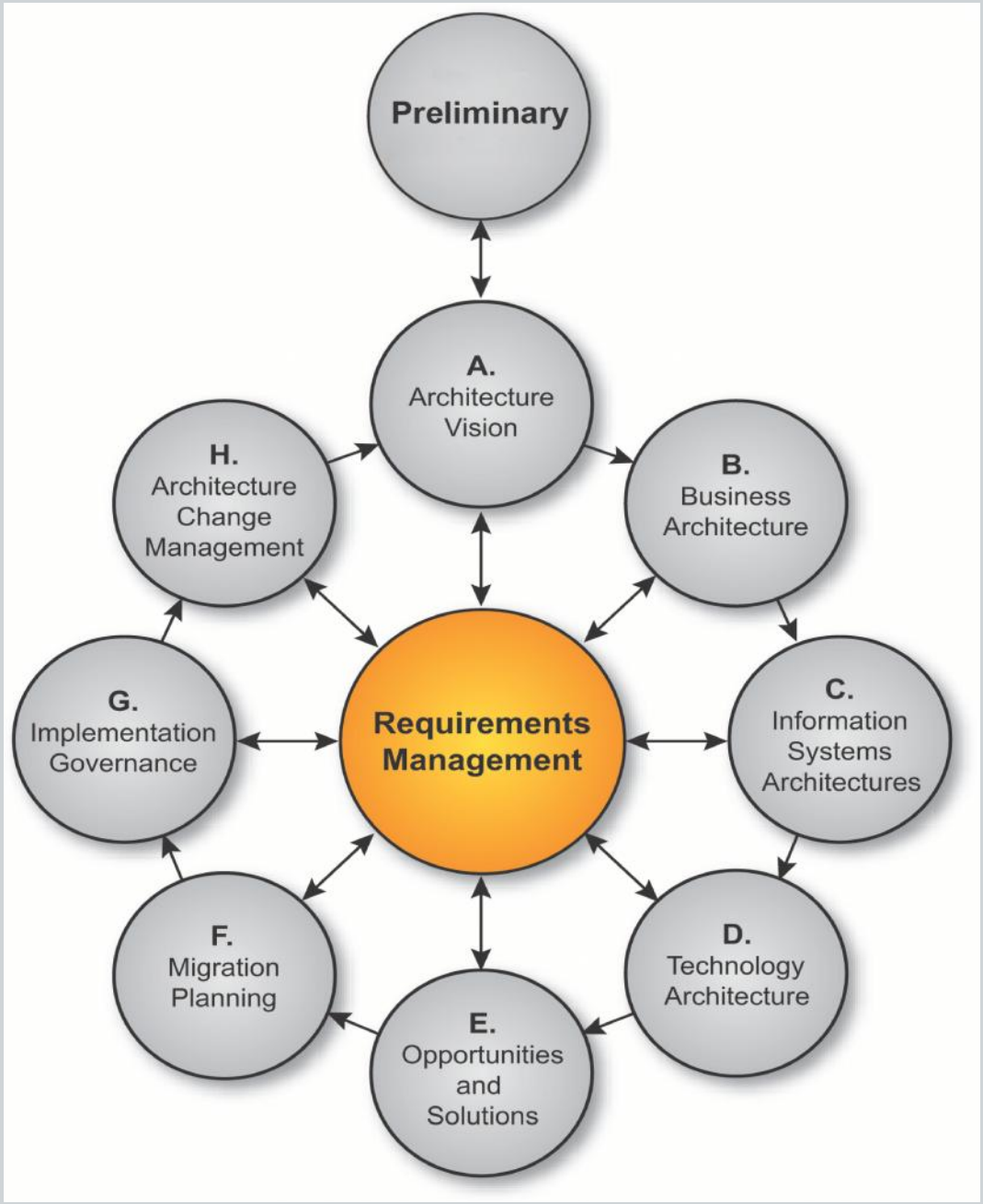
A Business Scenarios

B Gap Analysis

C Volère Requirements Specification template

D Requirements Tools

E Volère “waiting room” template



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