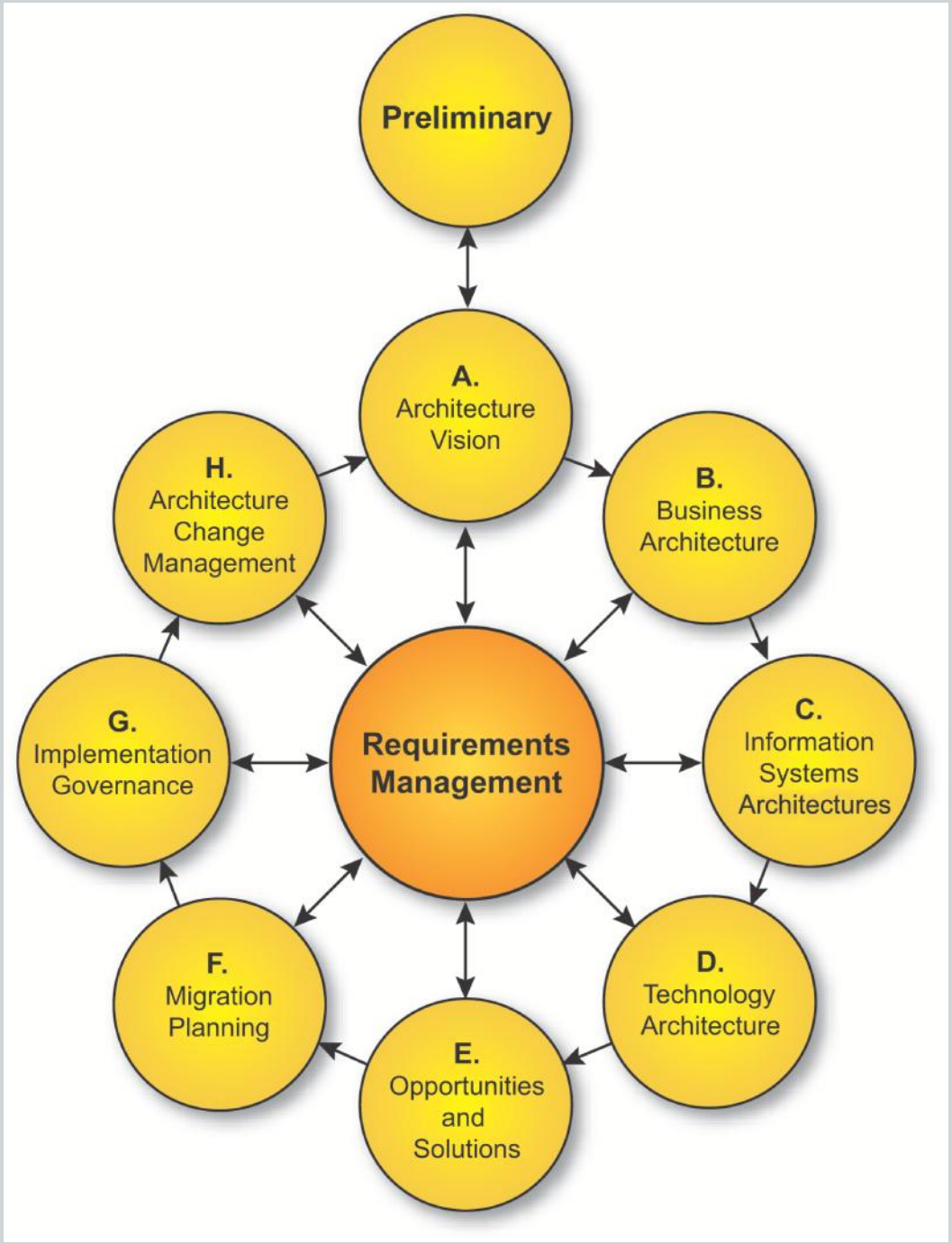
TOGAF®

Version 9.1 Enterprise Edition

Module 21
Foundation Architecture

THE Open GROUP

Published by The Open Group, 2011



Foundation Architecture

TOGAF®

Module Objectives

To understand what a TOGAF Foundation Architecture is.

The TOGAF Technical Reference Model (TRM) is an example of a Foundation Architecture.

- The Purpose, Structure and Use of the TRM
- The Platform Services Taxonomy
- Application Platform Service Qualities

TOGAF Foundation Architecture

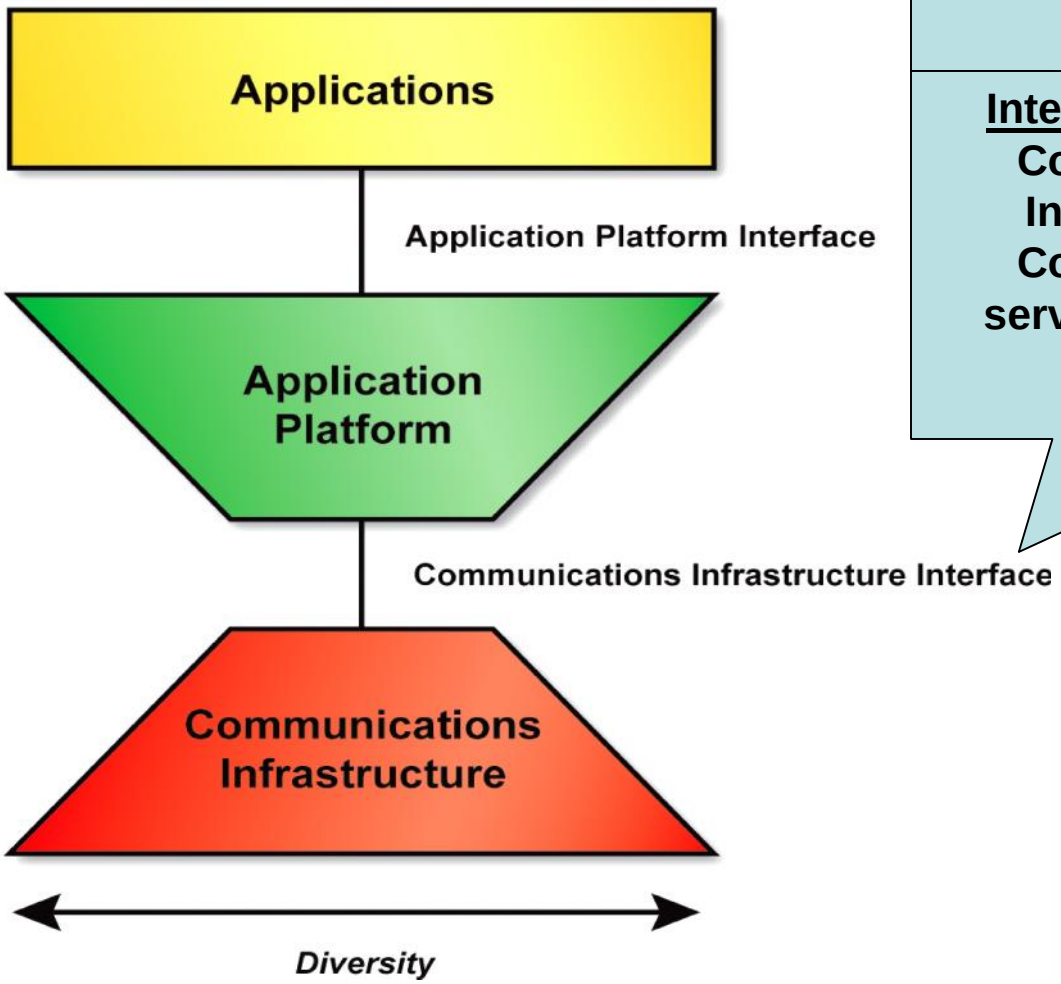
A Foundation Architecture is an architecture of building blocks and corresponding standards that supports all the Common Systems Architectures and, therefore, the complete enterprise operating environment.

- TOGAF provides a TRM Foundation Architecture.
- The ADM supports specialization of such Foundation Architectures in order to create organization-specific models.
- The TRM is an example of a Foundation architecture on which other, more specific architectures can be based.

TRM Components

- The TRM has two main components:
  - A taxonomy that defines terminology and provides a coherent description of the components and conceptual structure of an information system
  - An associated TRM graphic that provide a visual representation as an aid to understanding

The TRM



Application Portability is achieved via the Application Platform Interface, identifying the set of services that are to be made available in a standard way to applications via the platform

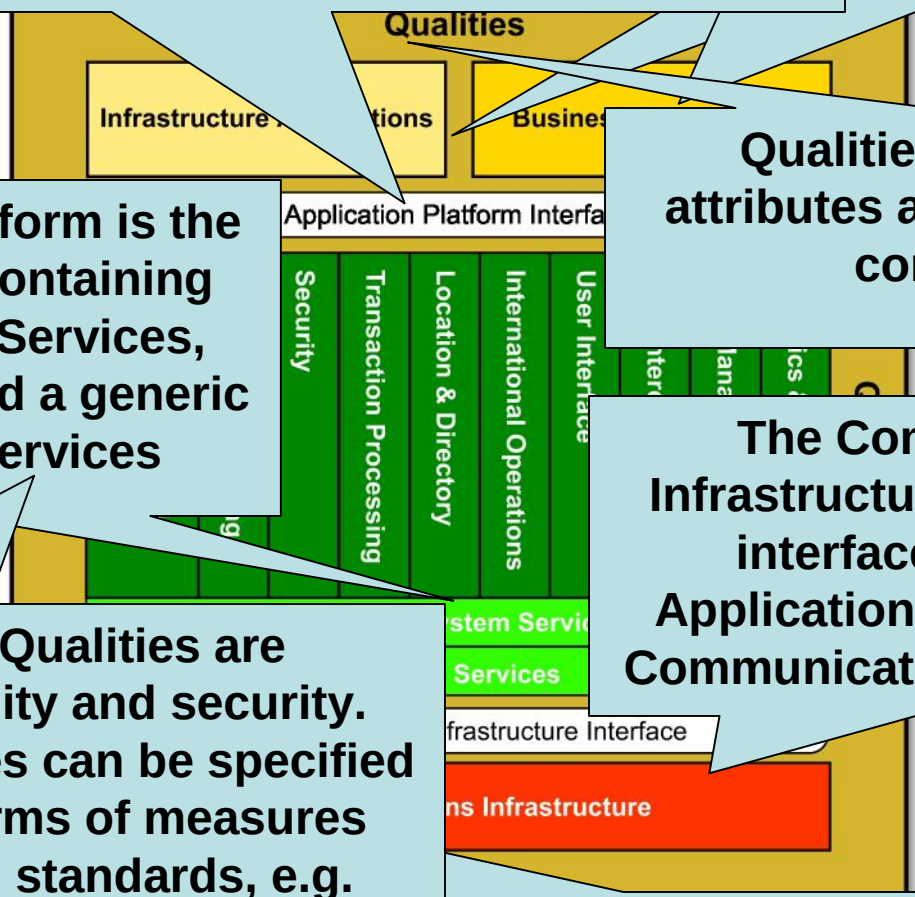
Interoperability is achieved via the Communications Infrastructure Interface, identifying the set of Communications Infrastructure services that are to be built on in a standard way

TOGAF®

Infrastructure Applications, provide general purpose functionality, usually COTS

The API specifies the interface between Application Software and the underlying platform

ess Applications, t business processes enterprise or vertical specific



Qualities are the set of attributes applying across all components

The Application Platform is the conceptual entity containing Operating System Services, Network Services and a generic set of Platform Services

The Communications Infrastructure Interface is the interface between the Application Platform and the Communications Infrastructure

Typical Qualities are manageability and security. Some qualities can be specified better in terms of measures rather than standards, e.g. performance

unications Infrastructure contains basic services to interconnect systems and provide for data transfer. It handles the physical communications infrastructure.

Using the TRM

- The Application Platform is a single, generic conceptual entity
- It contains all possible services
- The Enterprise Architect must analyze the services actually needed in order to define the optimal solutions building blocks
- The use of the ADM is not dependent on use of the TOGAF TRM taxonomy. Other taxonomies are possible and may be preferable.
- An organization may depict the TOGAF taxonomy (or its own) using a different graphic, which better captures legacy concepts for internal communication.

Taxonomy of Platform Services

- This defines terminology
- Provides a coherent description of an information system:
  - Components termed *service categories*
  - Conceptual structure
- Widely-acceptable useful, consistent, structured definition of the application platform entity

Continued...

Taxonomy of Platform Services

- Not exclusive or optimal definition
- The TOGAF ADM is not dependent on the TRM

Taxonomy of Platform Services

- Data Interchange Services
- Data Management Services
- Graphics and Imaging Services
- International Operation Services
- Location and Directory Services
- Network Services
- Operating System Services
- Software Engineering Services
- Transaction Processing Services
- User Interface Services
- Security Services
- System and Network Management Services

Taxonomy of Application Platform Service Qualities

- A service quality describes behavior
  - Such as adaptability or manageability
- Service qualities have a pervasive effect on the operation of most or all functional service categories
- During architecture development, the architect must be aware of the desired qualities and the extent of their influence on the choice of building blocks

Availability

Availability is the degree to which something is available for use. It can be split into 6 criteria:

- **Manageability**, the ability to gather information about the state of something and to control it
- **Serviceability**, the ability to identify problems and take corrective action such as to repair or upgrade a component in a running system
- **Performance**, the ability of a component to perform its tasks in an appropriate time

Continued...

Availability

- **Reliability**, resistance to failure
- **Recoverability**, the ability to restore a system to a working state after an interruption
- **Locatability**, the ability of a system to be found when needed

Continued...

Assurance

Assurance can be split into the following criteria:

- **Security,** the protection of information from unauthorized access
- **Integrity**, the assurance that data has not been corrupted
- **Credibility**, the level of trust in the integrity of the system and its data

Continued...

Usability

Usability is the ease-of-operation by users, including

- International operation, including multilingual and multicultural abilities

Continued...

Adaptability

Adaptability can be split into 5 criteria:

- **Interoperability,** whether within or outside the organization (for instance interoperability of calendaring or scheduling functions may be key to the usefulness of a system)
- **Scalability**, the ability of a component to grow or shrink its performance or capacity appropriately to the demands of the environment in which it operates

Continued...

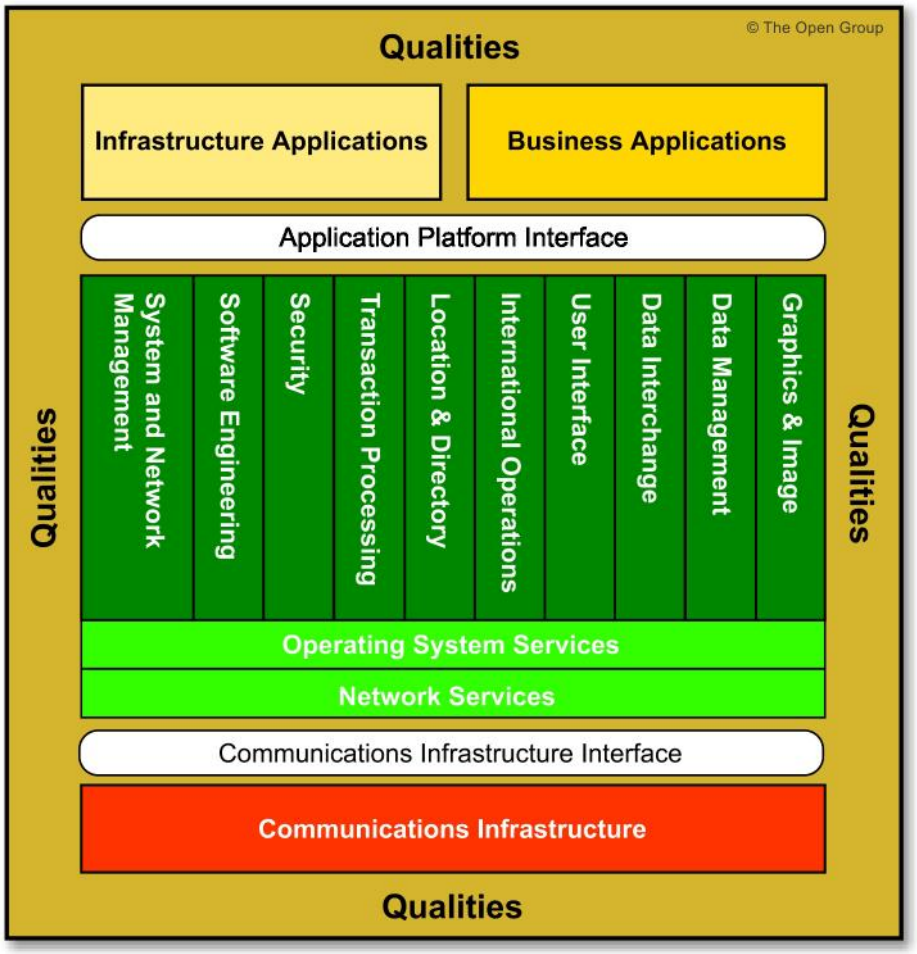
Adaptability

- **Portability**, of data, people, applications, and components
- **Extensibility**, to accept new functionality
- **Accessibility**, to services in new paradigms such as object orientation

Customizing the TRM

- Enterprises may need to customize the TRM
  - "One-size fits all" does not work everywhere
- The underlying aim is to ensure that higher level building blocks making up business solutions have a robust platform
- Other models, taxonomies and graphics may be preferable for some enterprises
- The TRM is a tool when applying the ADM
  - The ADM is valid whatever the choice of specific taxonomy

Summary

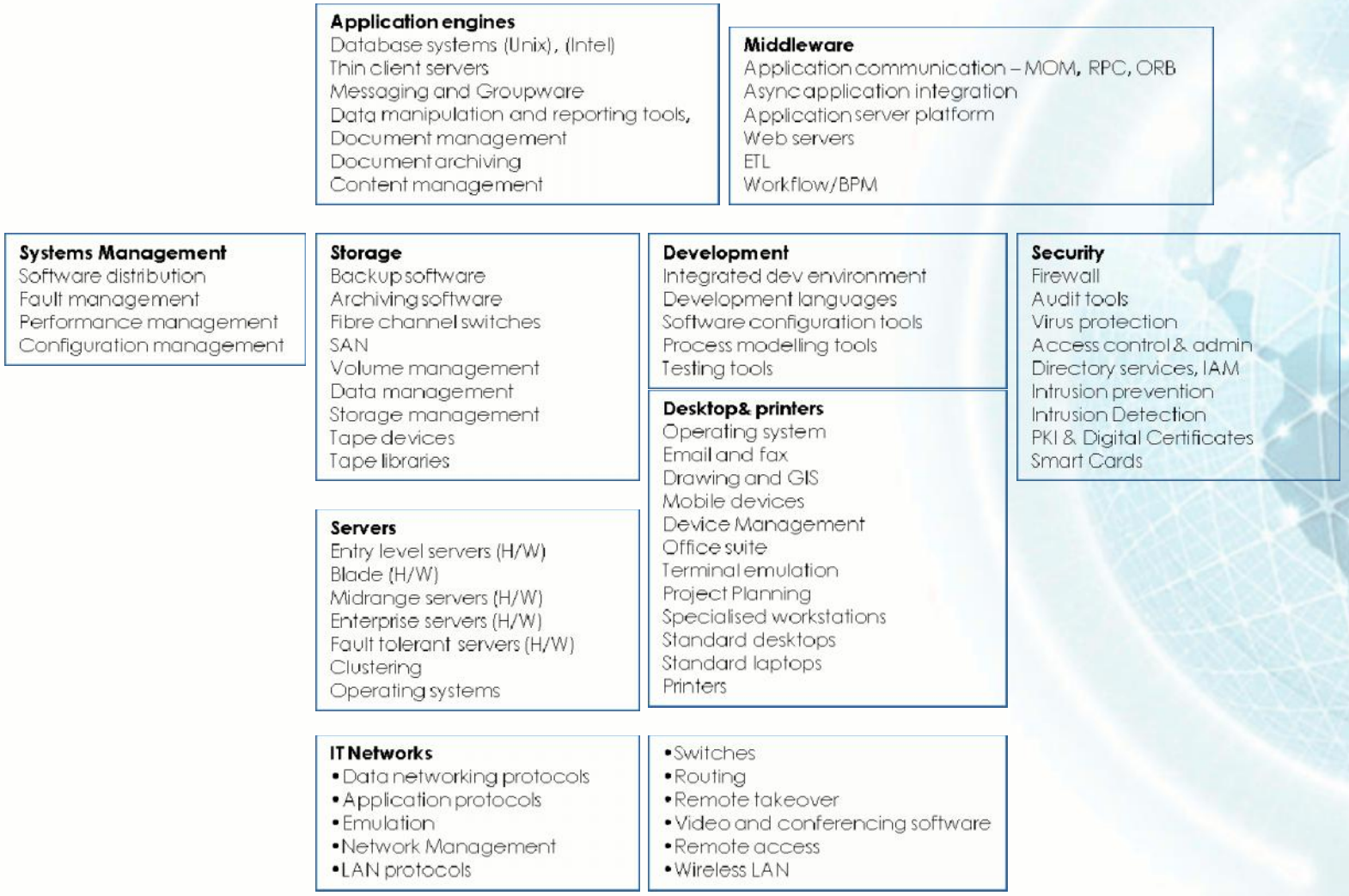


The TOGAF Technical Reference Model provides a model and core taxonomy of generic platform services

- It can be used to build any system architecture
- A taxonomy defines consistent terminology

TOGAF®

Customized TRM



TOGAF®

Test Yourself Question

Q. Which of the following best describes the purpose of the TRM?

A To provide a framework for IT Governance

B To provide a visual model, terminology and coherent description of components and structure of an information system

C To provide a list of standards

D To provide a method for architecture development

E To provide a system engineering viewpoint on a possible solution

Test Yourself Question

Q. Which of the following statements about the Taxonomy of Platform Services is true?

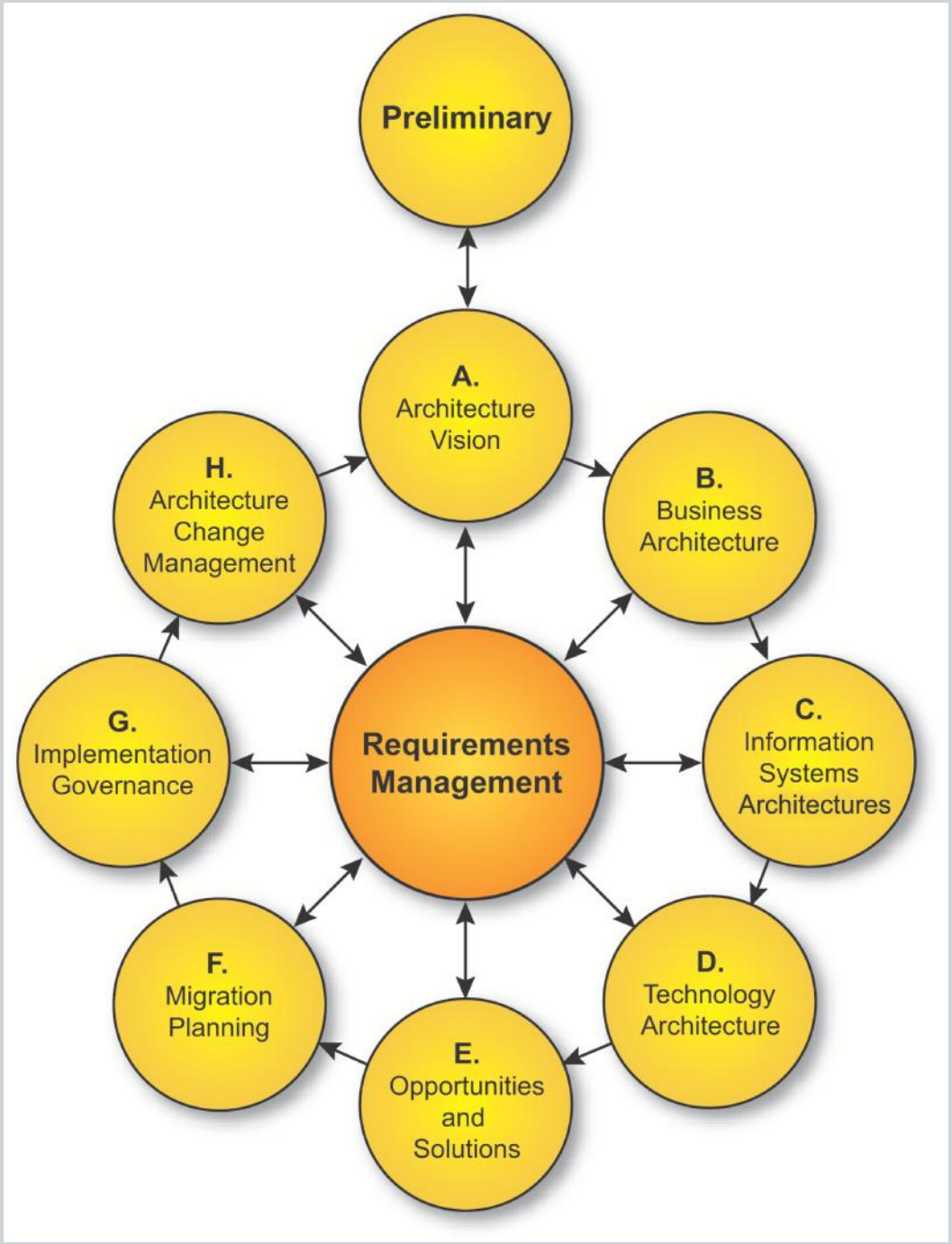
A It provides a description of a specific vertical industry information system

B It defines a number of service qualities

C It provides a widely accepted, useful definition of an Application Platform entity

D It is used in structuring the III-RM

E It provides a list of standards



Foundation Architecture

TOGAF®