

An Introduction to the ArchiMate® 2 Modeling Language

<http://www.opengroup.org/archimate>

The ArchiMate Forum

THE *Open* GROUP

44 Montgomery Street
Suite 960
San Francisco, CA
94104 USA

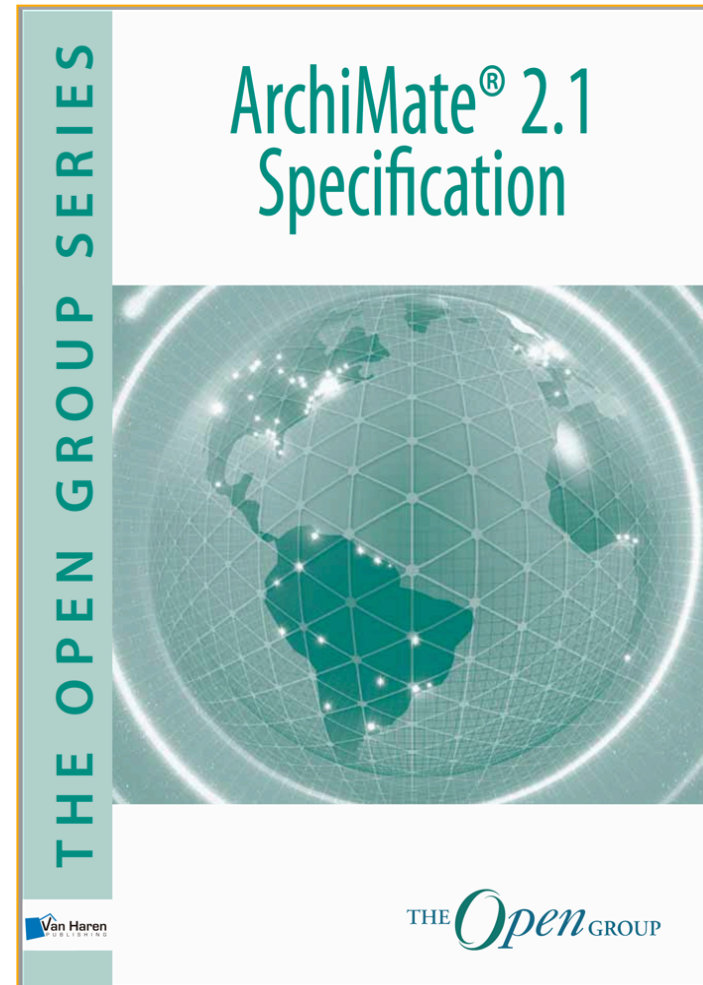
Tel +1 415 374 8280
Fax +1 415 374 8293
www.opengroup.org

ArchiMate is a registered trademark of The
Open Group

THE *Open* GROUP

ArchiMate, an Open Group Standard

- An open and independent modeling language for enterprise architecture
- A notation for describing, analyzing and visualizing relationships amongst business domains
- A common language

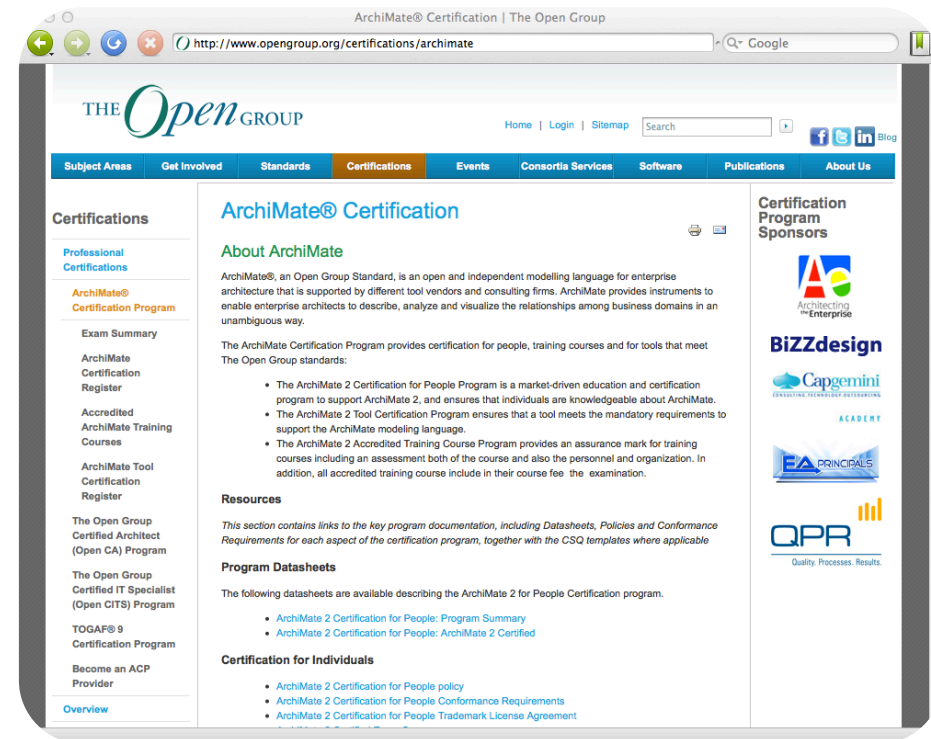


ArchiMate 2 Releases

- **ArchiMate 2.0 – January 2012**
 - A major release adding new features as well as addressing feedback and comments raised
 - An upwards-compatible evolution
 - ArchiMate 2.0 now supports modeling throughout the TOGAF Architecture Development Method
- **ArchiMate 2.1 – December 2013**
 - A maintenance update addressing feedback and comments raised since the introduction of ArchiMate 2.0

ArchiMate 2 Certification Program

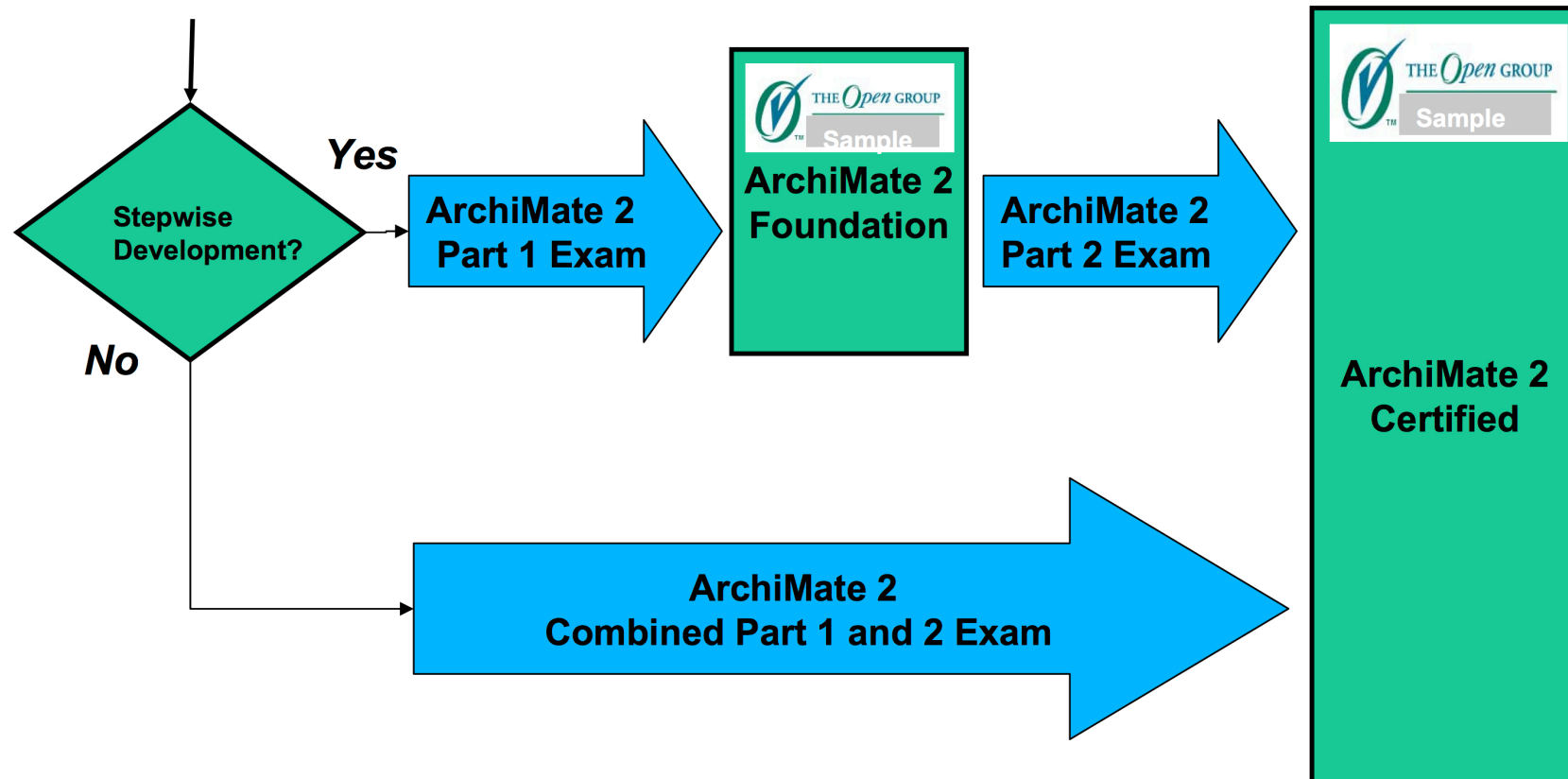
- Certification for People
- Accreditation for Training Courses
- Certification for Tools



ArchiMate Certification for People

- Ensures that individuals are knowledgeable and have an understanding of the ArchiMate language
- Is a common baseline of knowledge
- Provides a visible trust mark
- Is a foundation for the emerging profession
- There are two levels for Certification
 - ArchiMate 2 Foundation
 - ArchiMate 2 Certified

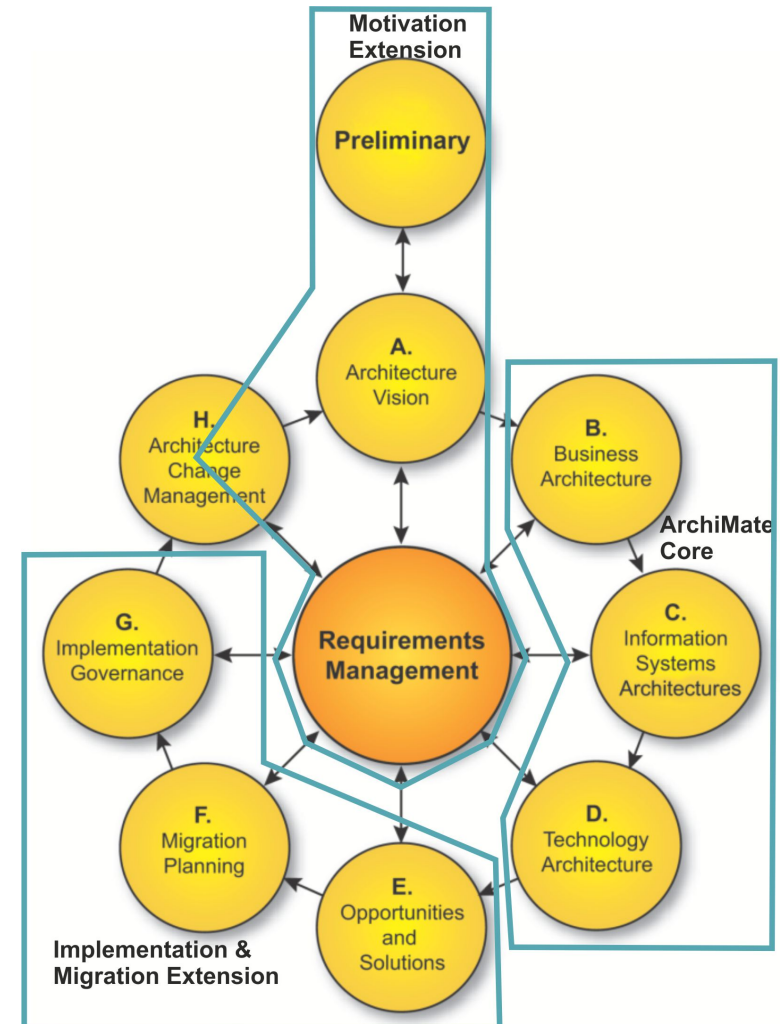
Certification Paths*



* The Part 2 and Combined Part 1 and 2 exams will be available in early 2014

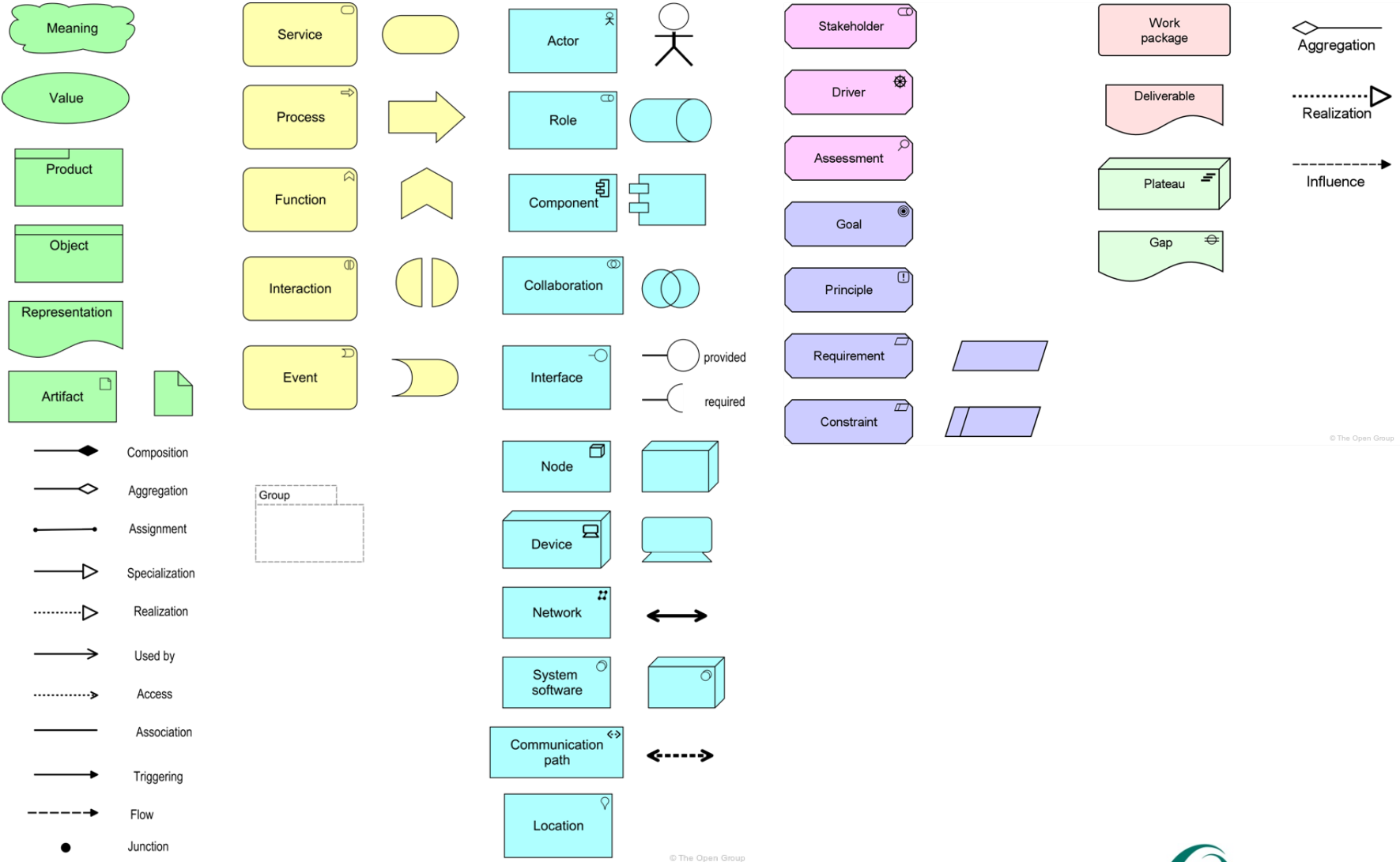
ArchiMate 2 and the TOGAF® ADM

- ArchiMate Core
 - Enables modeling of the architecture domains defined by TOGAF
- Motivation Extension
 - Enables modeling of stakeholders, drivers for change, business goals, principles and requirements
- Implementation and Migration Extension
 - Enables modeling of project portfolio management, gap analysis and transition and migration planning



© The Open Group

ArchiMate 2 Summary



ArchiMate Core

	Active Structure Concepts				Behavioral Concepts				Passive Structure Concepts	
Business	Business actor		Business role		Business process		Business service		Business object	Representation
	Business collaboration		Business interface		Business function		Business event		Product	Meaning
	Location				Business interaction				Contract	Value
Application	Application component		Application collaboration		Application function		Application interaction		Data object	
	Application interface				Application service					
Technology	Node		Device		Infrastructure function		Infrastructure service		Artifact	
	Network		System software							
	Communication path		Infrastructure interface							

ArchiMate® 2.1

Extensions

The **Motivation Extension** adds concepts such as goal, principle, and requirement. It addresses the way the enterprise architecture is aligned to its context, as described by motivational elements.

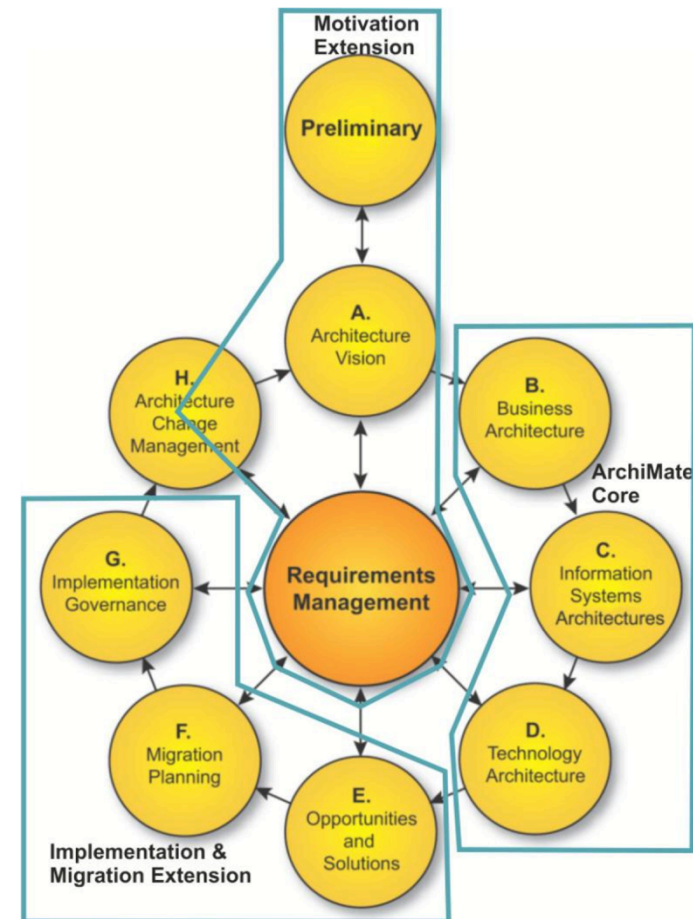
The **Implementation and Migration Extension** adds concepts to support the later ADM phases, related to the implementation and migration of architectures.

Motivation Extension

Stakeholder	Assessment
Driver	Goal
Requirement	Constraint
Principle	

Implementation and Migration Extension

Work package	Deliverable	Plateau	Gap
--------------	-------------	---------	-----

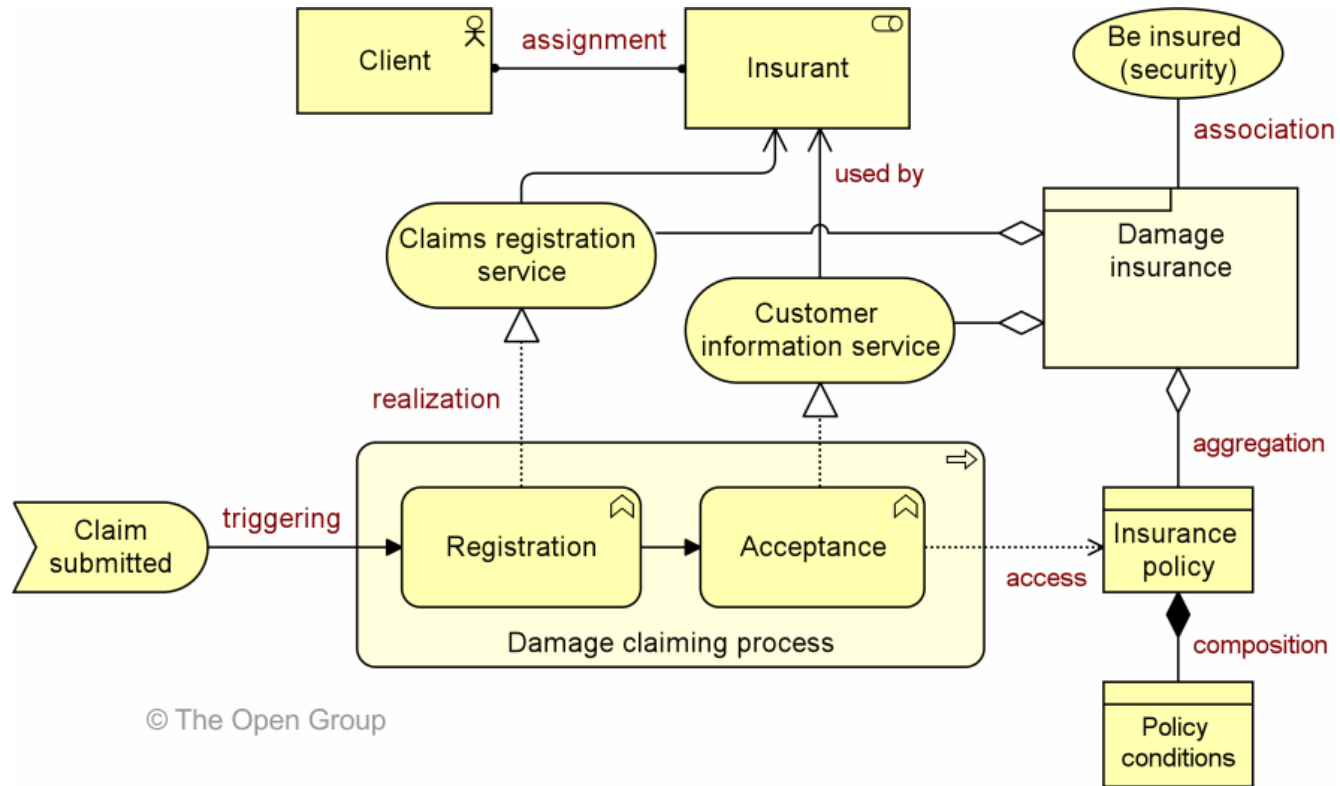


© The Open Group

Relationships

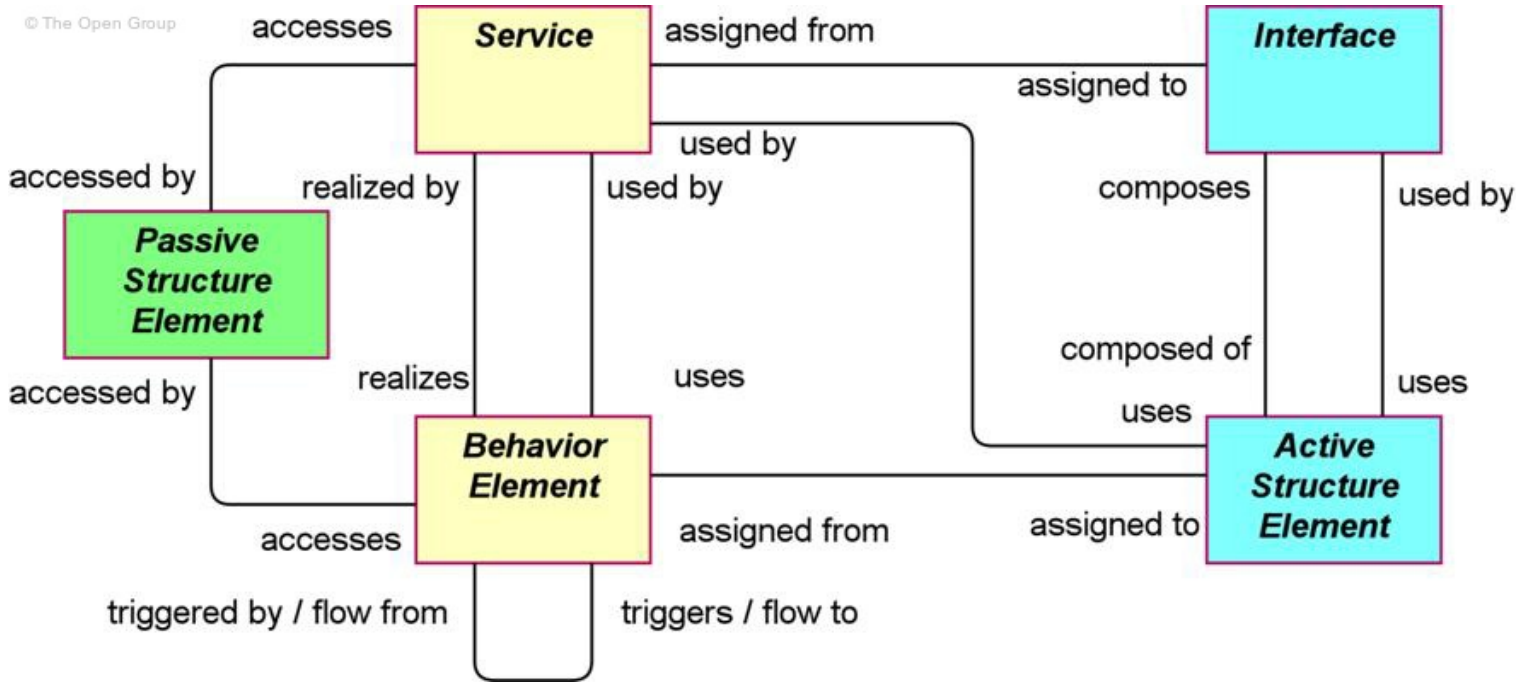
Structural Relationships		Notation
Association	Association models a relationship between objects that is not covered by another, more specific relationship.	
Access	The access relationship models the access of behavioral concepts to business or data objects.	
Used by	The used by relationship models the use of services by processes, functions, or interactions and the access to interfaces by roles, components, or collaborations.	
Realization	The realization relationship links a logical entity with a more concrete entity that realizes it.	
Assignment	The assignment relationship links units of behavior with active elements (e.g., roles, components) that perform them, or roles with actors that fulfill them.	
Aggregation	The aggregation relationship indicates that an object groups a number of other objects.	
Composition	The composition relationship indicates that an object is composed of one or more other objects.	
Dynamic Relationships		Notation
Flow	The flow relationship describes the exchange or transfer of, for example, information or value between processes, function, interactions, and events.	
Triggering	The triggering relationship describes the temporal or causal relationships between processes, functions, interactions, and events.	
Other Relationships		Notation
Grouping	The grouping relationship indicates that objects, of the same type or different types, belong together based on some common characteristic.	
Junction	A junction is used to connect relationships of the same type.	
Specialization	The specialization relationship indicates that an object is a specialization of another object.	

Example Relationships

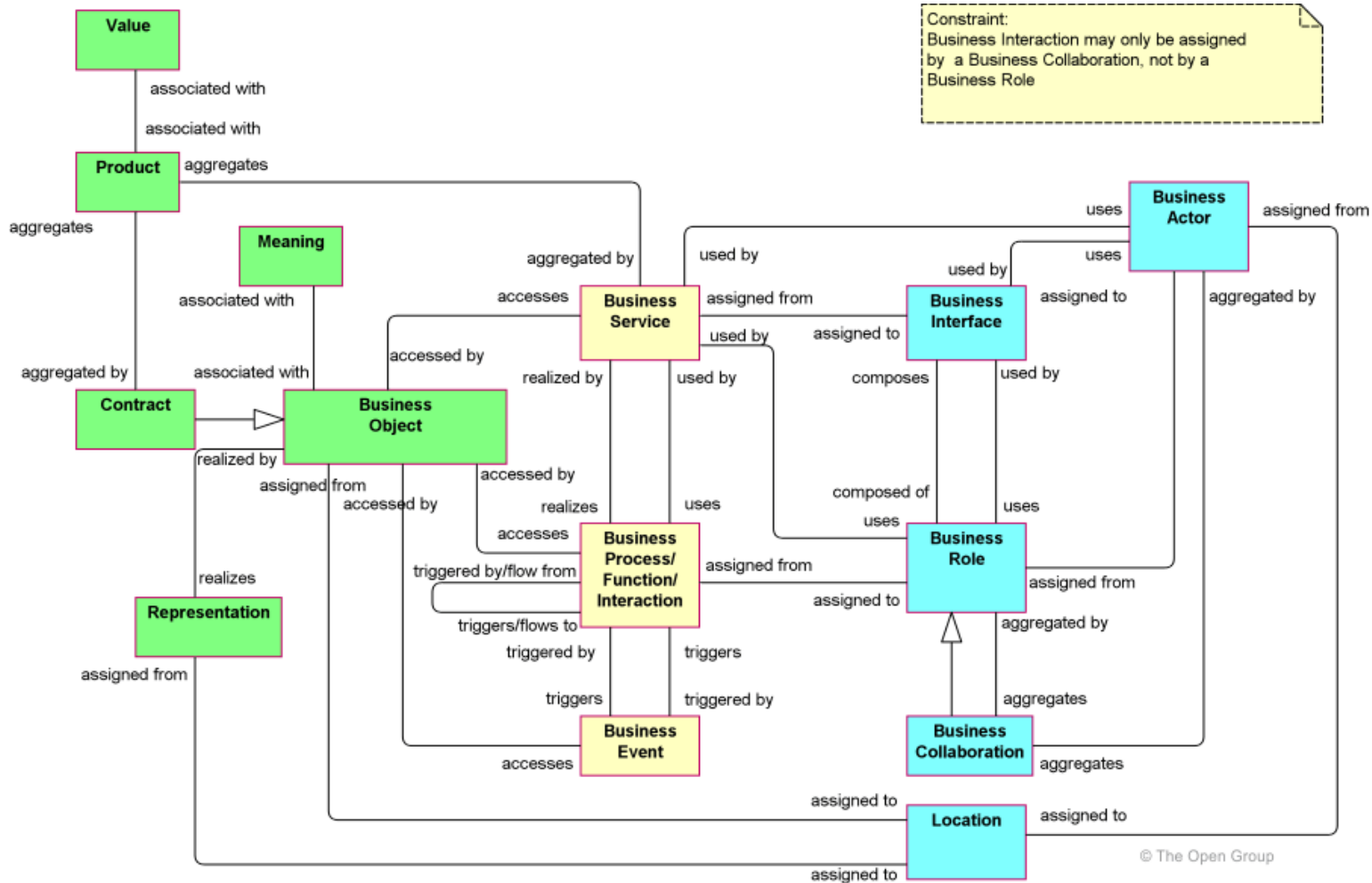


© The Open Group

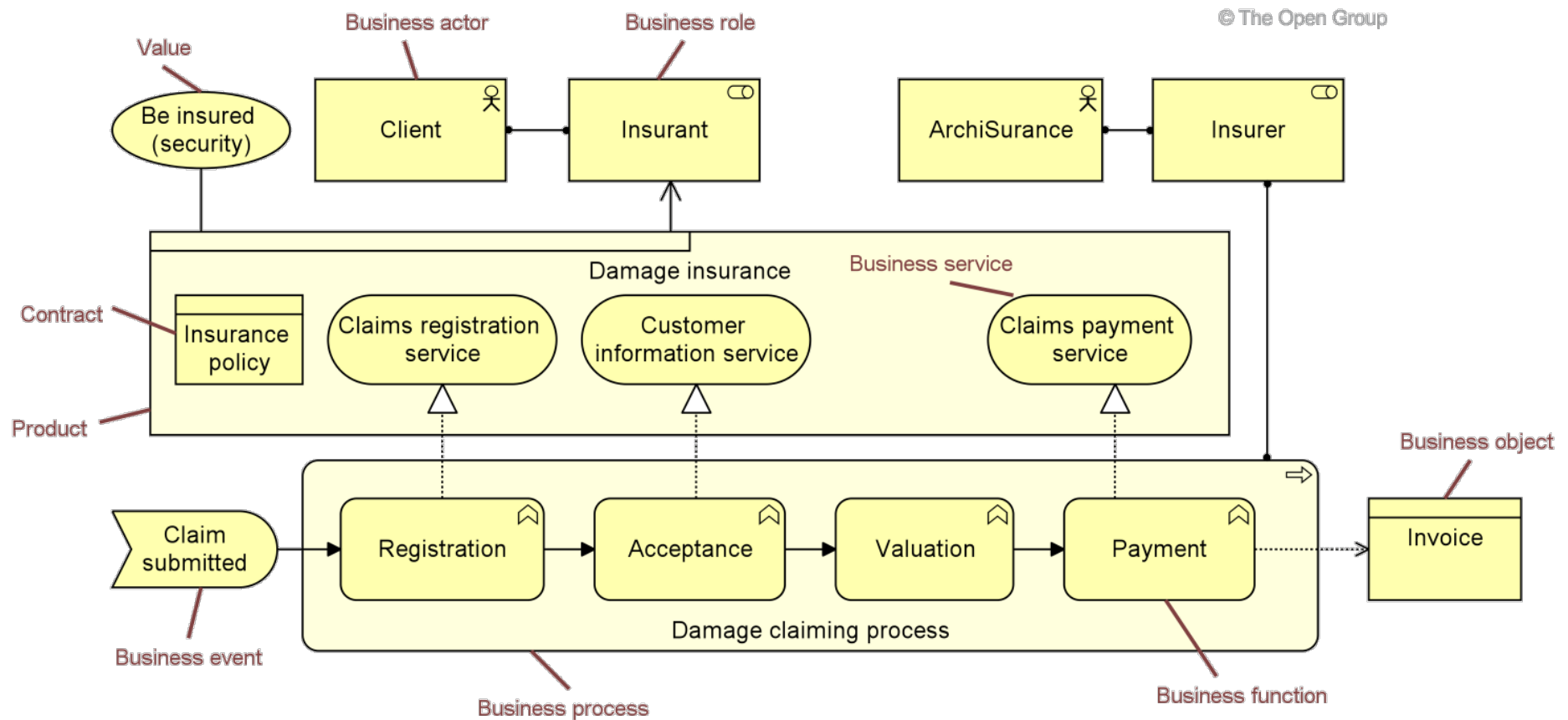
Generic Metamodel – Core Concepts of ArchiMate



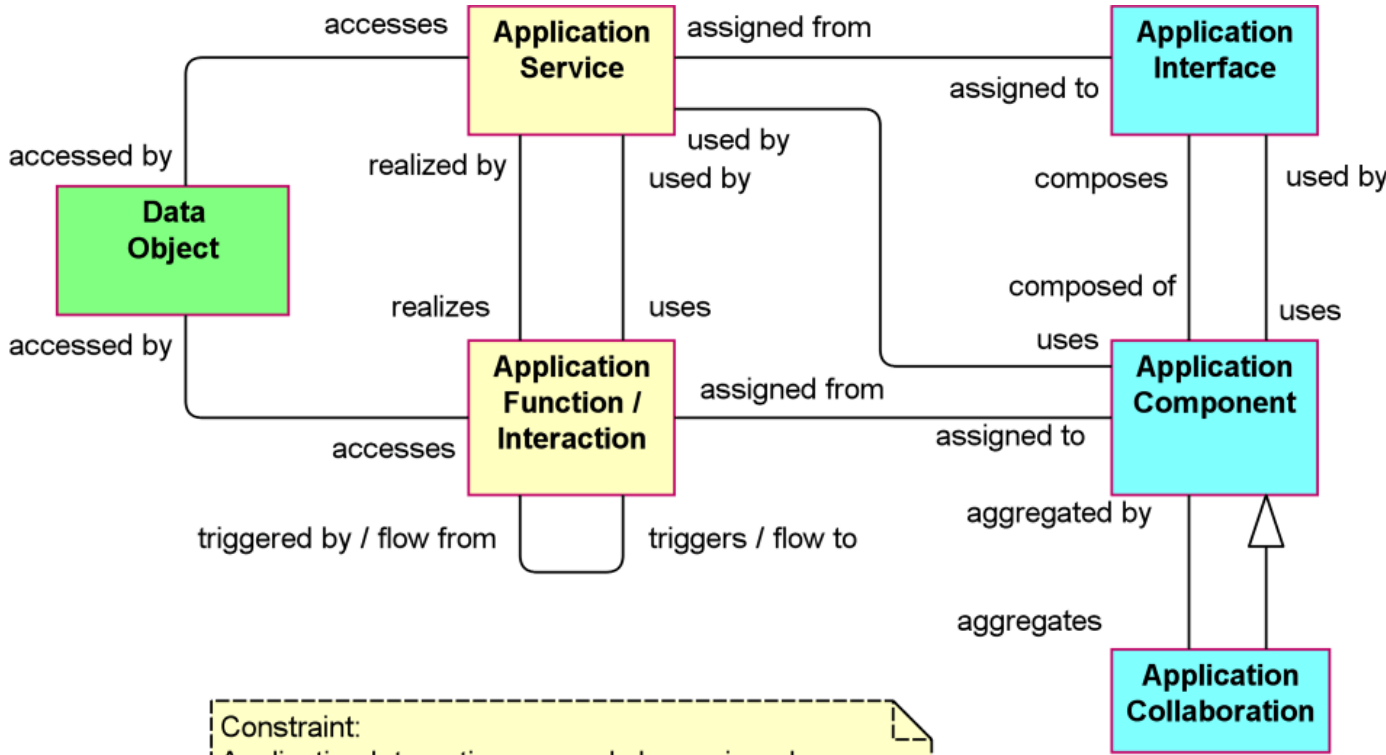
Business Layer Metamodel



Example Business Layer Model



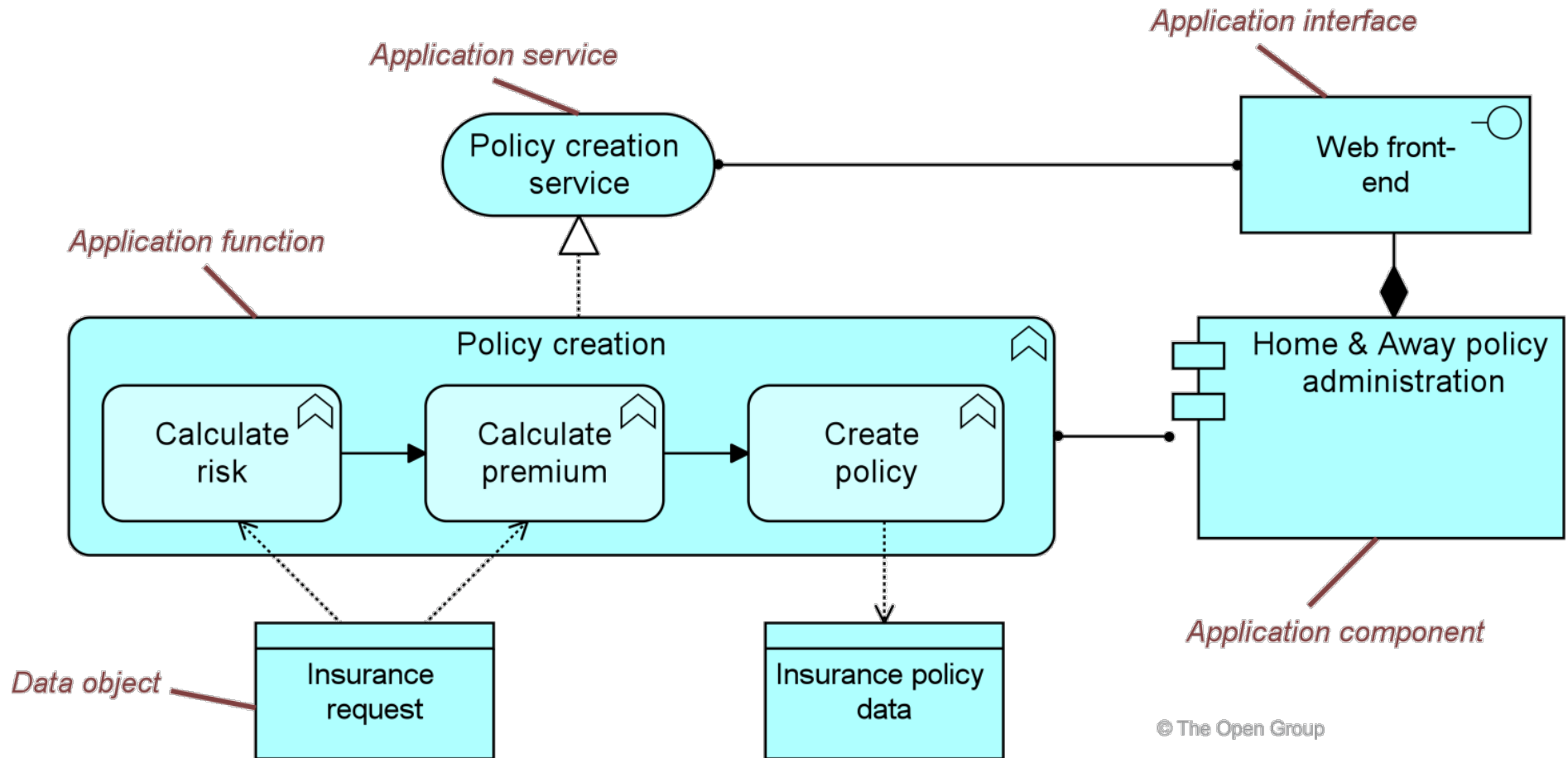
Application Layer Metamodel



Constraint:
 Application Interaction may only be assigned by an Application Collaboration, not by an Application Component.

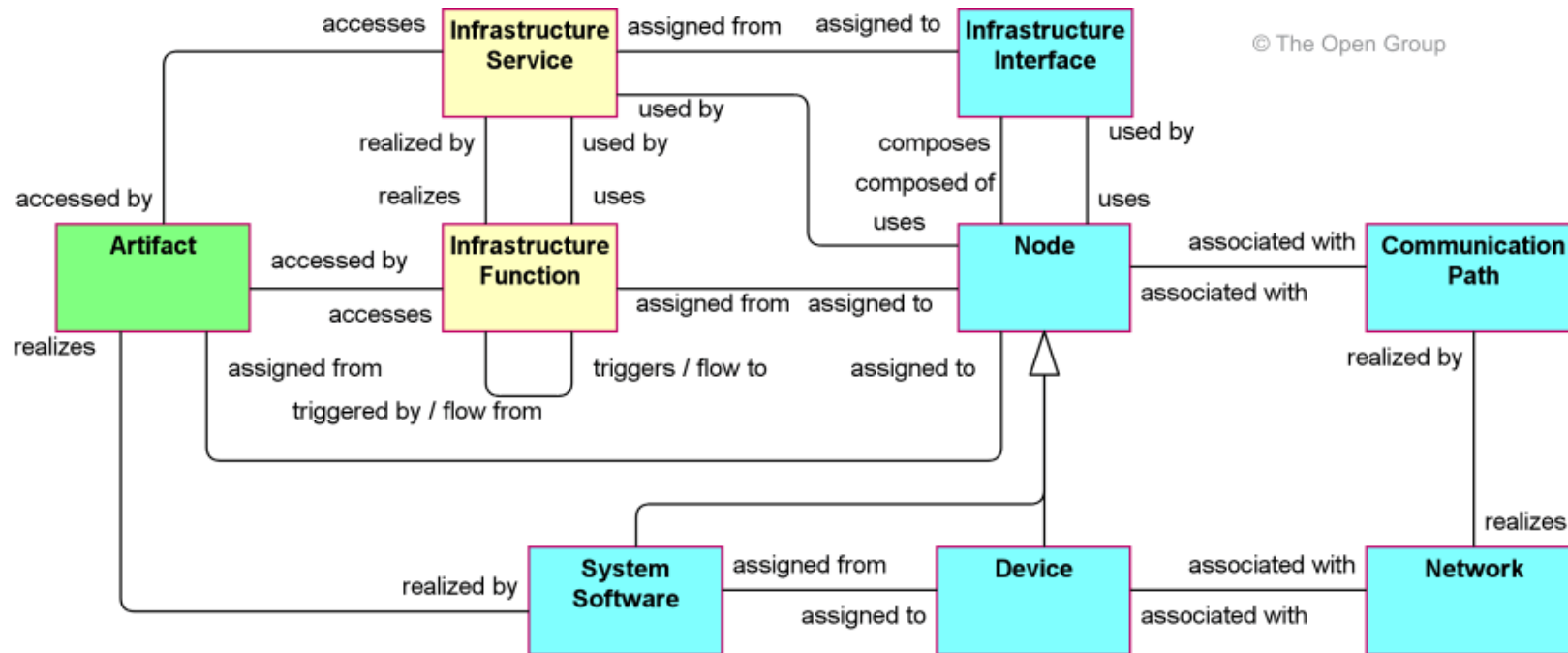
© The Open Group

Example Application Layer Model



© The Open Group

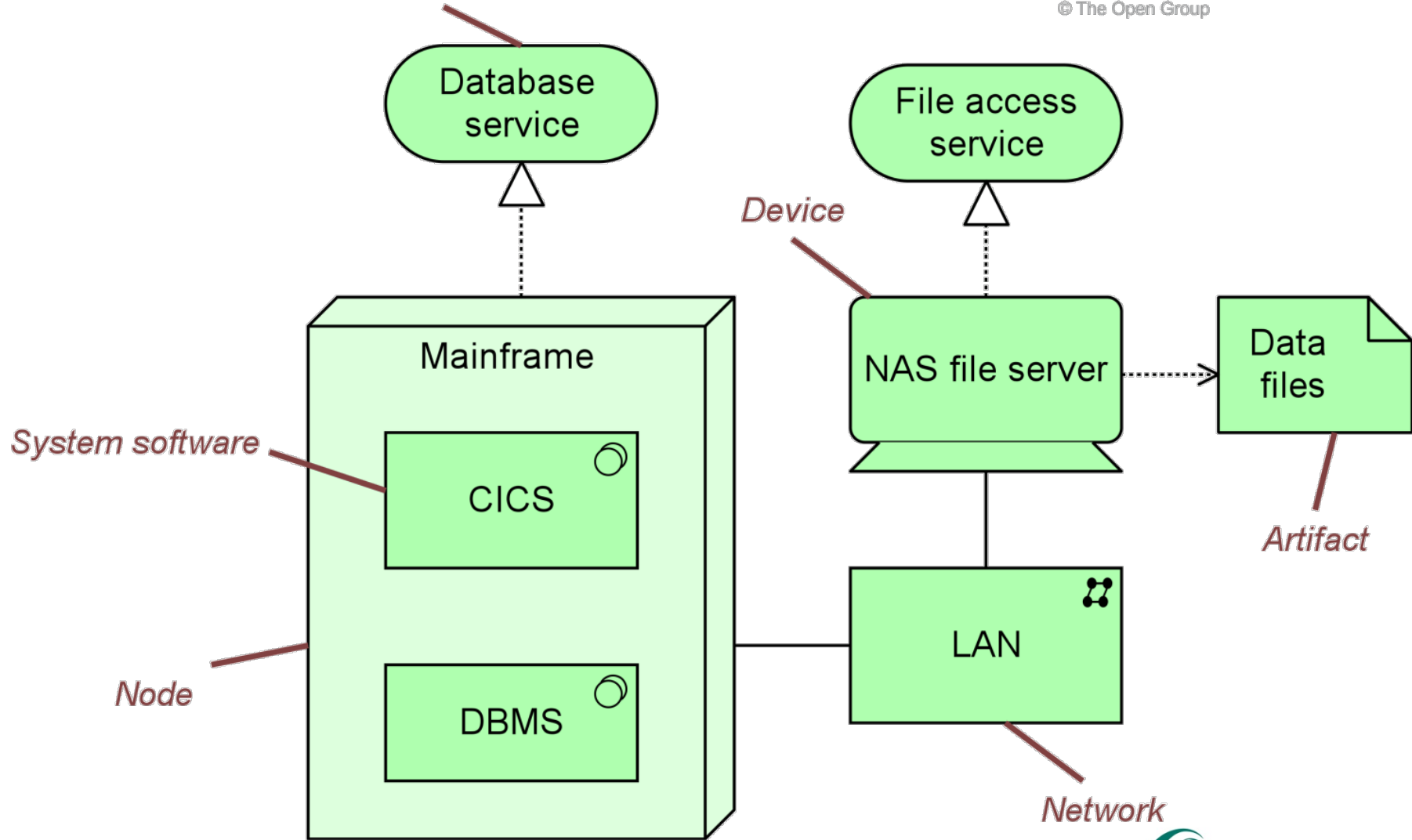
Technology Layer Metamodel



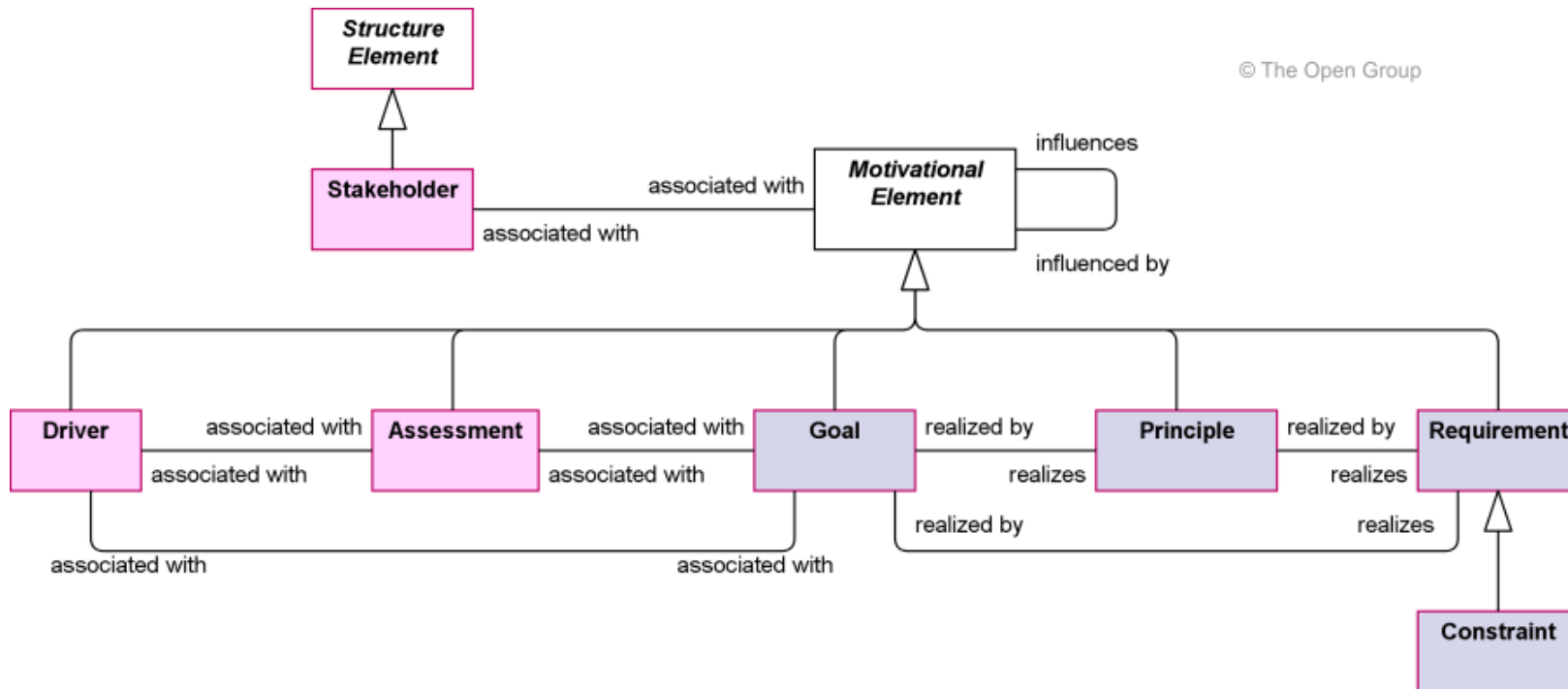
Example Technology Layer Model

Infrastructure service

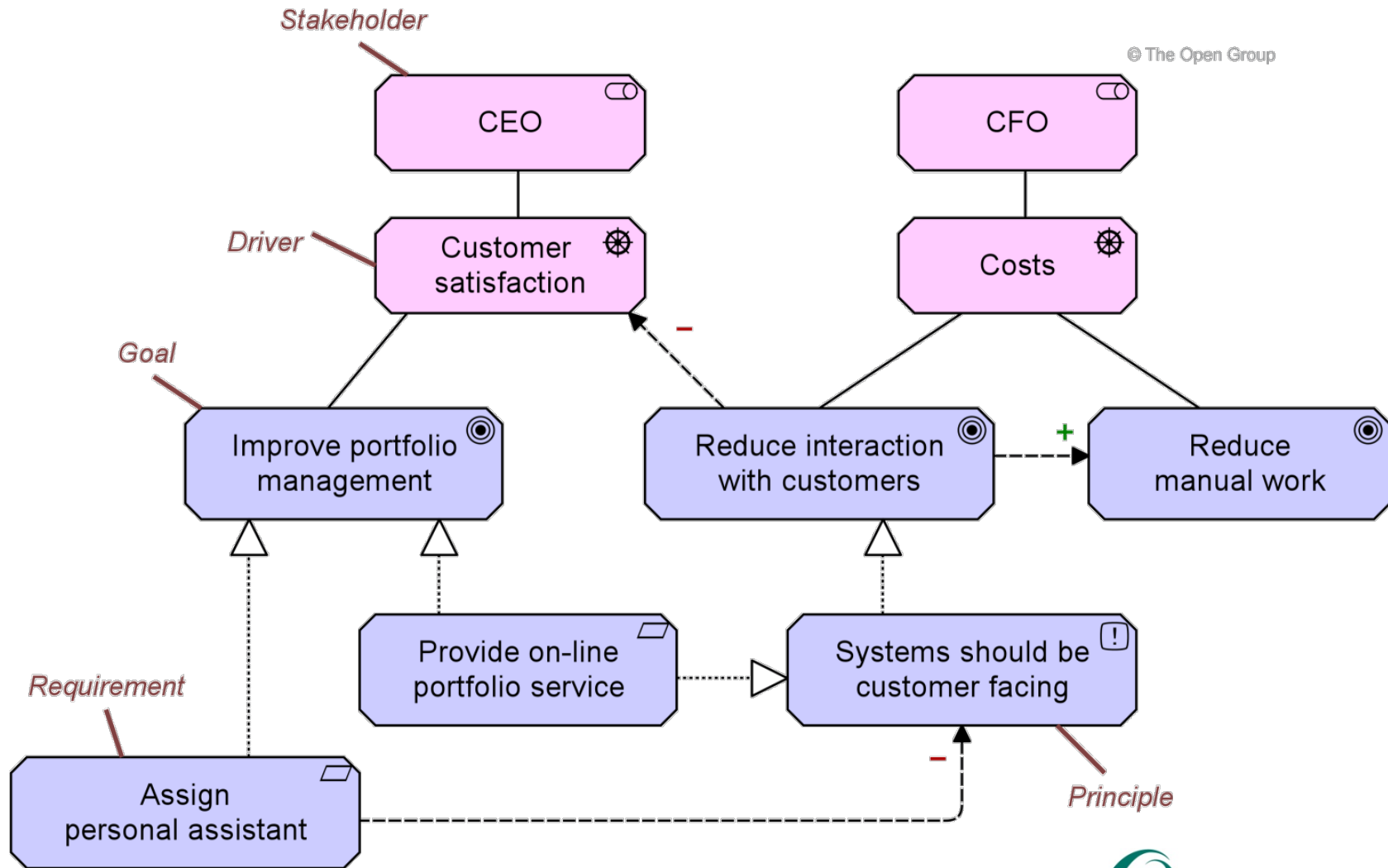
© The Open Group



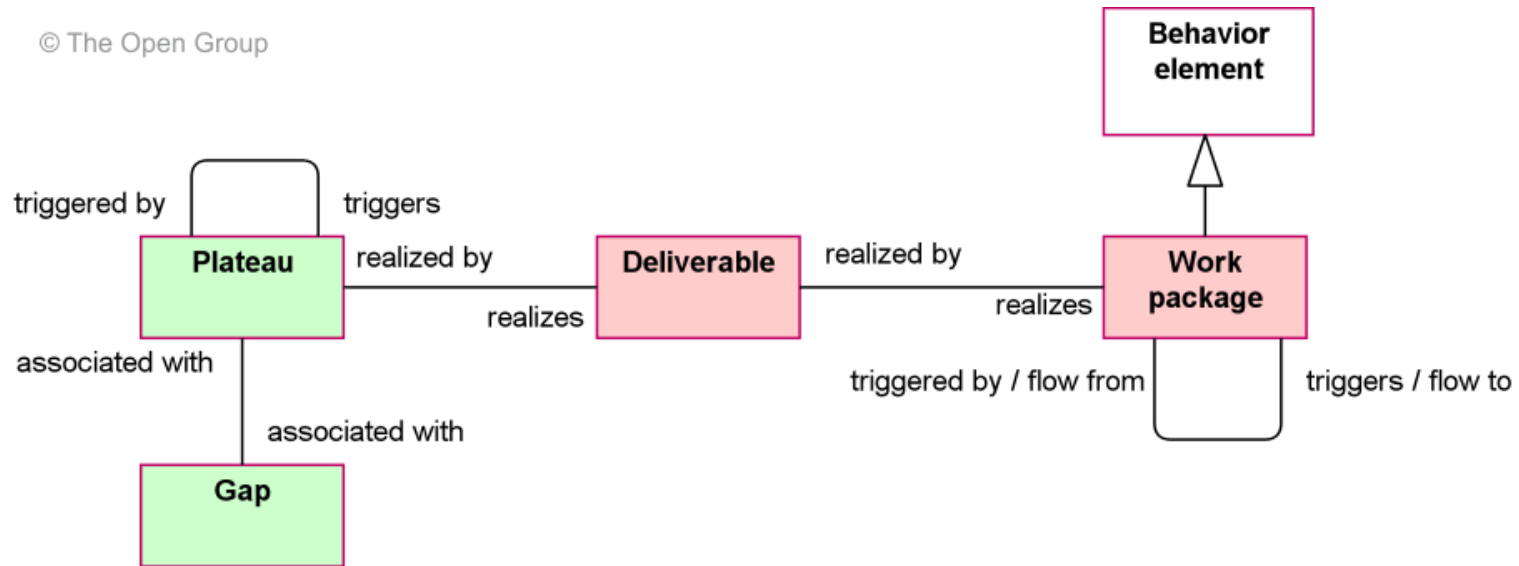
Motivation Extension Metamodel



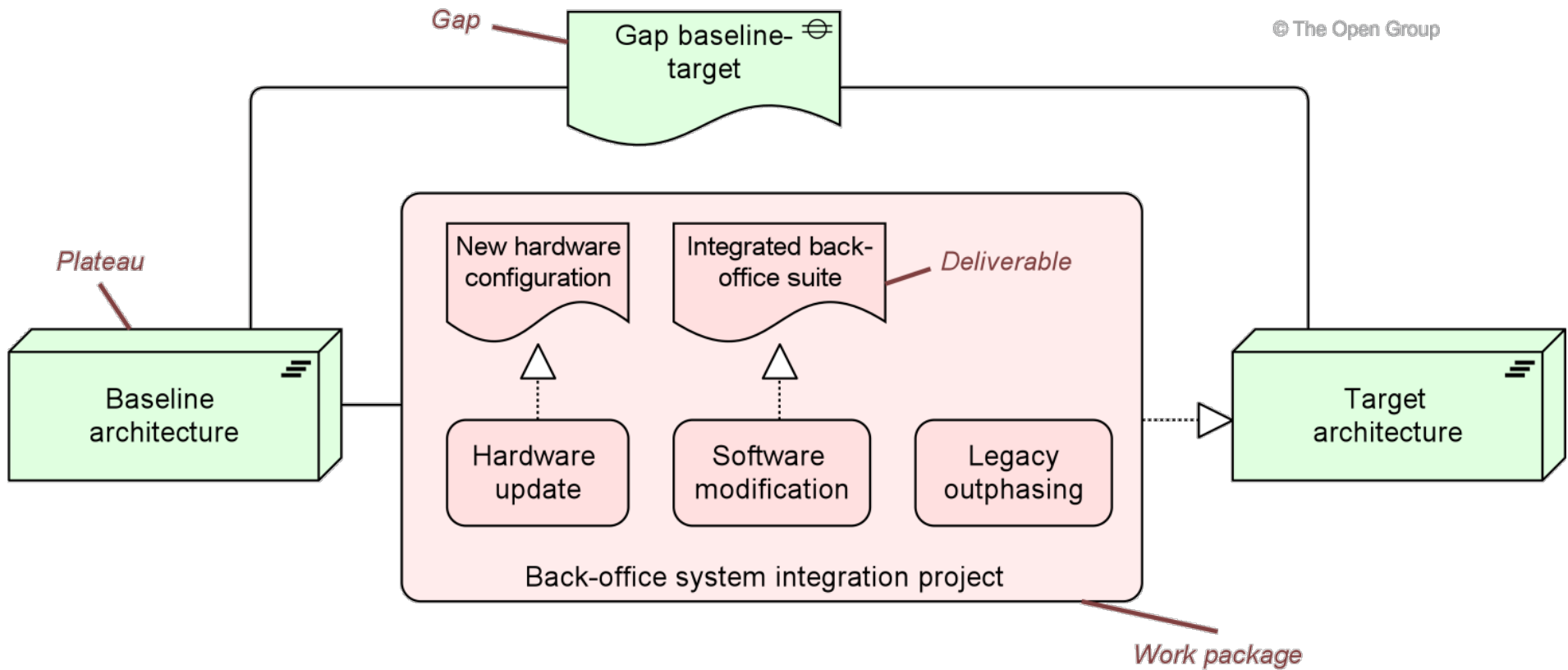
Example Motivation Extension Model



Implementation & Migration Extension Metamodel



Example Implementation & Migration Model

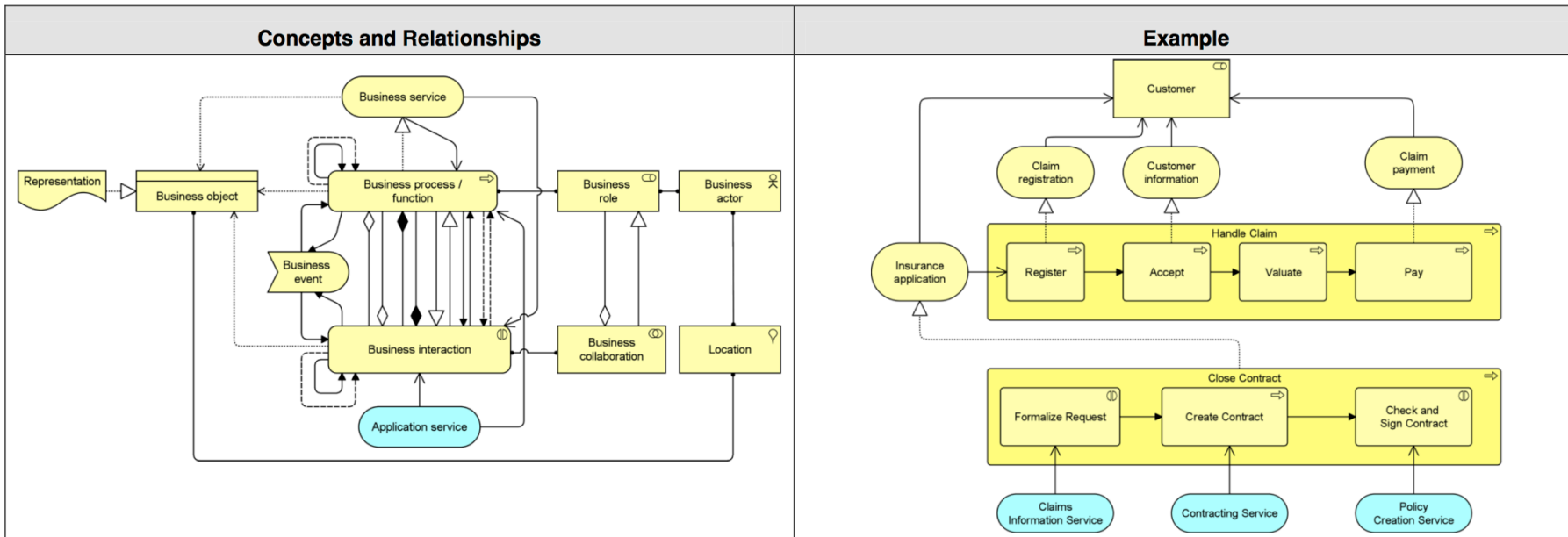


ArchiMate Standard Viewpoints

Viewpoint	Description
Introductory	This viewpoint uses a simplified notation to explain the essence of an architecture model to non-architects that require a simpler, more intuitive notation.
Organization	This viewpoint focuses on the (internal) organization of a company, a department, a network of companies, or of another organizational entity.
Actor Co-operation	This viewpoint focuses on the relationships of actors with each other and their environment.
Business Function	This viewpoint shows the main business functions of an organization and their relationships in terms of the flows of information, value, or goods between them.
Business Process	This viewpoint shows the high-level structure and composition of one or more business processes.
Business Process Co-operation	This viewpoint shows the relationships of one or more business processes with each other and/or with their environment.
Product	This viewpoint describes the value that one or more products offer to the customers or other external parties involved and shows the composition of one or more products in terms of the constituting (business or application) services, and the associated contract(s) or other agreements.
Application Behavior	This viewpoint describes the internal behavior of an application; e.g., as it realizes one or more application services.
Application Co-operation	This viewpoint describes the relationships between applications components in terms of the information flows between them, or in terms of the services they offer and use.
Application Structure	This viewpoint shows the structure of one or more applications or components.
Application Usage	This viewpoint describes how applications are used to support one or more business processes, and how they are used by other applications.
Infrastructure	This viewpoint describes the software and hardware infrastructure elements supporting the application layer, such as physical devices, networks, or system software (e.g., operating systems, databases, and middleware).
Infrastructure Usage	This viewpoint shows how applications are supported by the software and hardware infrastructure: the infrastructure services are delivered by the devices; system software and networks are provided to the applications.
Implementation and Deployment	This viewpoint shows how one or more applications are realized on the infrastructure.
Information Structure	This viewpoint shows the structure of the information used in the enterprise or in a specific business process or application, in terms of data types or (object-oriented) class structures.
Service Realization	This viewpoint shows how one or more business services are realized by the underlying processes (and sometimes by application components).
Layered	This viewpoint shows several layers and aspects of an enterprise architecture in a single diagram.
Landscape Map	This viewpoint uses a matrix to represent a three-dimensional co-ordinate system describing architectural relationships.

Business Process Co-operation Viewpoint

Stakeholders	Process and domain architects, operational managers	
Concerns	Dependencies between business processes, consistency and completeness, responsibilities	
Purpose	Designing, deciding	
Abstraction Level	Coherence	
Layer	Business layer, Application layer	
Aspects	Behavior	

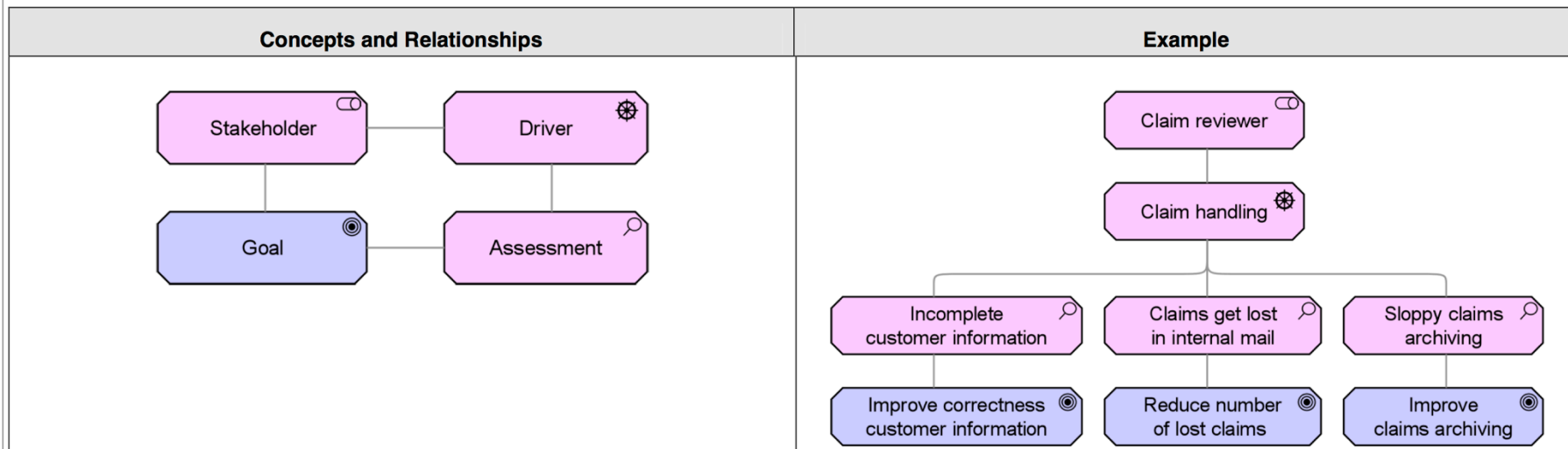


ArchiMate Extension Viewpoints

Viewpoint	Type	Description
Stakeholder	Motivation Extension	This viewpoint allows the analyst to model the stakeholders, the internal and external drivers for change, and the assessments (in terms of strengths, weaknesses, opportunities, and threats) of these drivers.
Goal Realization	Motivation Extension	This viewpoint allows a designer to model the refinement of (high-level) goals into more concrete goals, and the refinement of concrete goals into requirements or constraints that describe the properties that are needed to realize the goals.
Goal Contribution	Motivation Extension	This viewpoint allows a designer or analyst to model the influence relationships between goals and requirements.
Principles	Motivation Extension	This viewpoint allows the analyst or designer to model the principles that are relevant to the design problem at hand, including the goals that motivate these principles.
Requirements Realization	Motivation Extension	This viewpoint allows the designer to model the realization of requirements by the core elements, such as business actors, business services, business processes, application services, application components, etc.
Motivation	Motivation Extension	This viewpoint allows the designer or analyst to model the motivation aspect, without focusing on certain elements within this aspect.
Project	Implementation & Migration Extension	This viewpoint is used to model the management of architecture change.
Migration	Implementation & Migration Extension	This viewpoint contains models and concepts that describe the transition from an existing architecture to a desired architecture.
Implementation & Migration	Implementation & Migration Extension	This viewpoint is used to relate programs and projects to the parts of the architecture that they implement.

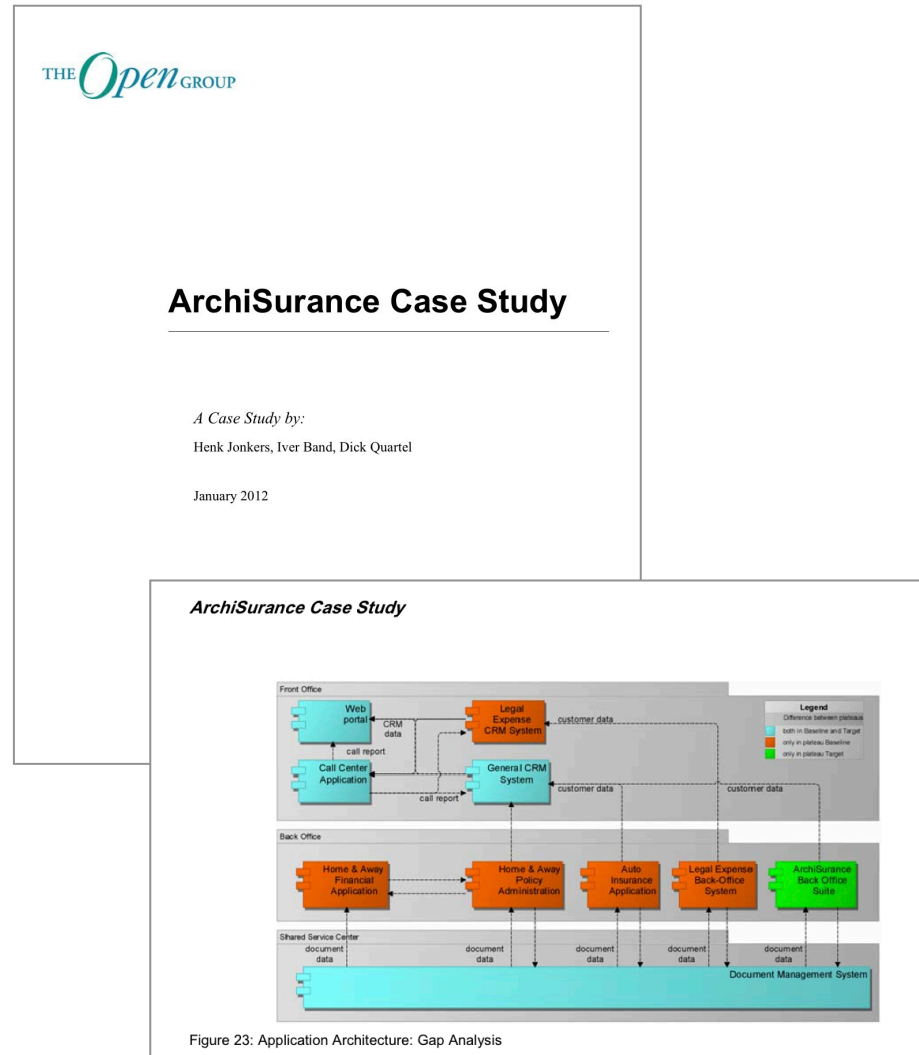
Stakeholder Viewpoint

Stakeholders	Stakeholders, business managers, enterprise and ICT architects, business analysts, requirements managers	
Concerns	Architecture mission and strategy, motivation	
Purpose	Designing, deciding, informing	
Abstraction Level	Coherence, Details	
Layer	Business, Application, and Technology layers	
Aspects	Motivation	



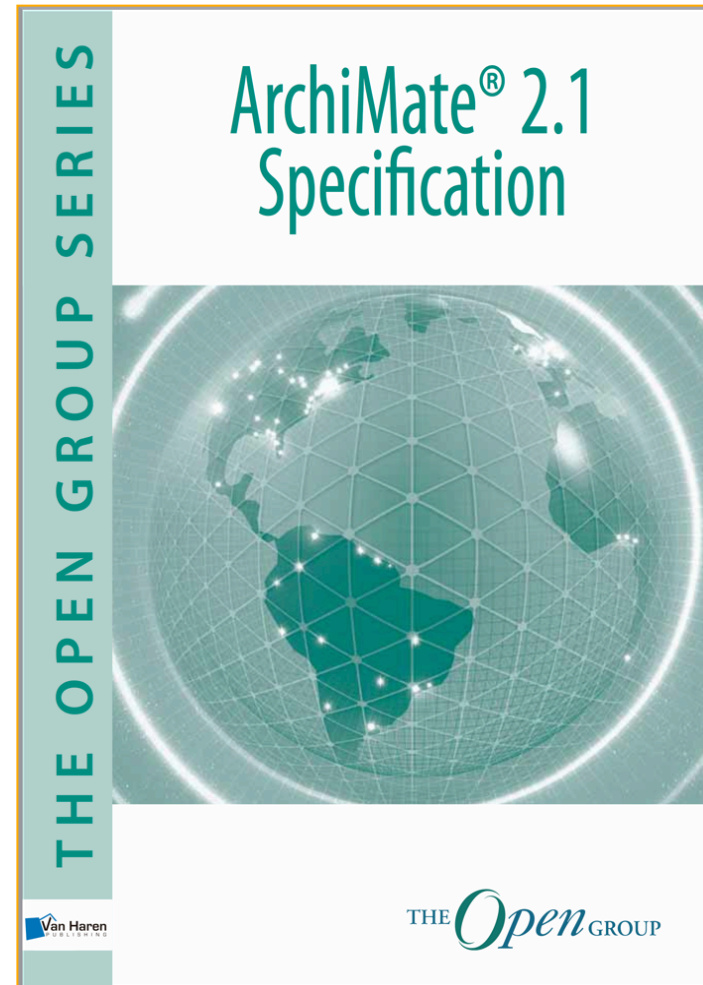
The ArchiSurance Case Study

- The ArchiSurance Case Study is a fictitious example developed to illustrate the use of the ArchiMate® modeling language in the context of the TOGAF® framework.
- Document Number: Y121



More Information

- ArchiMate 2.1 Specification
- ISBN:1-937218-43-0
- Document Number:C13L
- Free pdf download from The Open Group
- Hard Copy from Van Haren Publishing
- Read ArchiMate online via the web



More Information

- Reference Card sets, the ArchiMate 2.1 Pocket Guide, Information sheets and fact sheets are available from The Open Group

ArchiMate® 2.1 THE Open GROUP

ArchiMate Core

	Active Structure Concepts			Behavioral Concepts			Passive Structure Concepts					
Business	Business actor			Business process		Business service		Business object		Representation		
	Business collaboration		Business interface		Business function		Business event		Product		Meaning	
	Location			Business interaction				Contract		Value		
Application	Application component		Application collaboration		Application function		Application interaction		Data object			
	Application interface			Application service								
Technology	Node		Device		Infrastructure function		Infrastructure service		Artifact			
	Network		System software									
	Communication path		Infrastructure interface									

N131 Reference Card: ArchiMate® 2.1 Copyright © 2013 The Open Group. All Rights Reserved. ArchiMate® is a registered trademark of The Open Group.

ArchiMate® 2.1 THE Open GROUP

Business Layer

Concept	Description	Notation	Concept	Description	Notation
Business Actor	An organizational entity that is capable of performing behavior via a role.		Business Event	Something that happens (internally or externally) and influences behavior (business process, business function, business interaction).	
Business Role	The responsibility for performing specific behavior, to which an actor can be assigned.		Business Service	A service that fulfils a business need for a customer (internal or external to the organization).	
Business Collaboration	An aggregate of two or more business roles that work together to perform collective behavior.		Business Object	A passive element that has relevance from a business perspective.	
Business Interface	A point of access where a business service is made available to the environment.		Representation	A perceptible form of the information carried by a business object.	
Location	A conceptual point or extent in space.		Meaning	The knowledge or expertise present in a business object or its representation, given a particular context.	
Business Process	A behavior element that groups behavior based on an ordering of activities. It is intended to produce a defined set of products or business services.		Value	The relative worth, utility, or importance of a business service or product.	
Business Function	A behavior element that groups behavior based on a chosen set of criteria (typically required business resources and/or competences).		Product	A coherent collection of services, accompanied by a contract/set of agreements, which is offered as a whole to (internal or external) customers.	
Business Interaction	A behavior element that describes the behavior of a business collaboration.		Contract	A formal or informal specification of agreement that specifies the rights and obligations associated with a product.	

N131 Reference Card: ArchiMate® 2.1 Copyright © 2013 The Open Group. All Rights Reserved. ArchiMate® is a registered trademark of The Open Group.