Enterprise Architecture Views and Viewpoints

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Views and Viewpoints

■ View:

   ♦ Part of an architecture description that

   ● is addressed to a set of stakeholder

   ● addresses a set of related concerns and

   ♦ A view is specified by means of a viewpoint

■ Viewpoint …

   ♦ prescribes the concepts, models, analysis techniques, and visualizations that are provided by the view

A *view* is what you see and
a *viewpoint* is where you are looking from

What is and what is not shown in a view depends on the scope of the viewpoint and on what is relevant to the concerns of the stakeholders

Source: ArchiMate 2.0 Specification, chapter 8, http://pubs.opengroup.org/architecture/archimate2-doc/chap08.html

View and Viewpoints in Zachman Framework

- In the Zachman Framework, viewspoints are classified by perspectives and aspects, i.e. a choice of columns and rows
  - ♦ Example: the "how" and "who" from the "Architects Perspective"

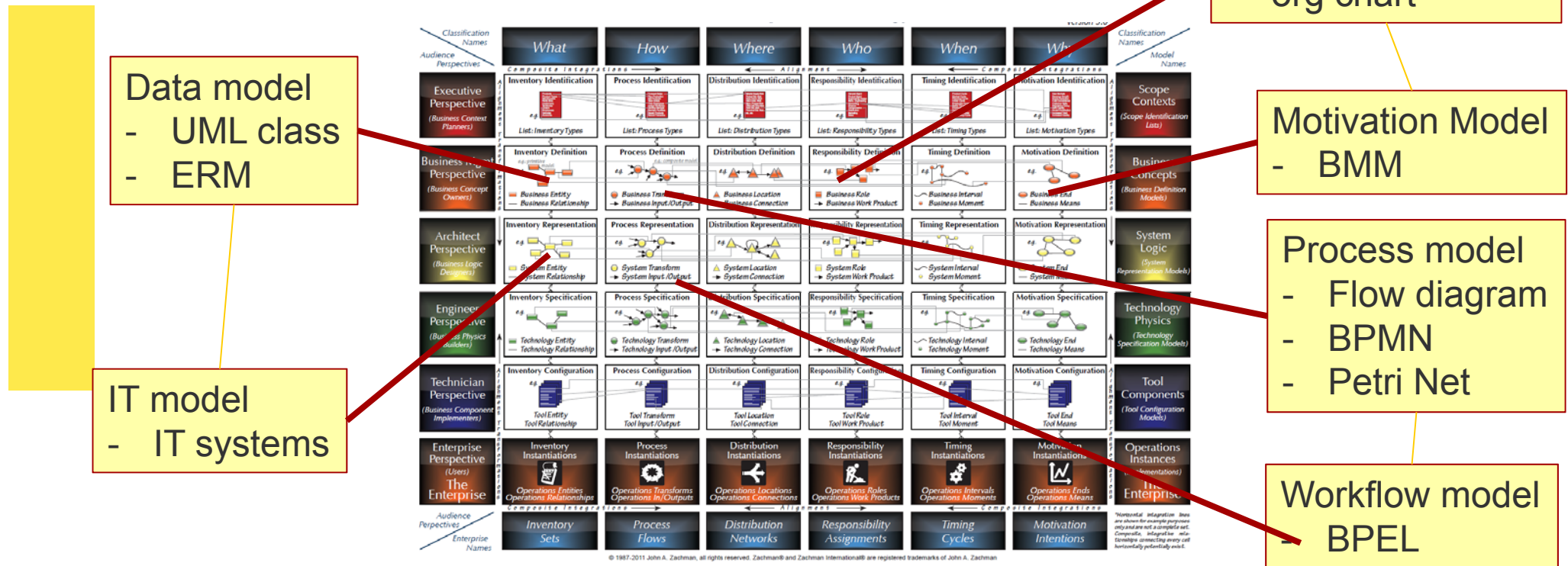- A view is aset of models of the cells for the corresponding viewpoint (incl. the relationships between the models)

Views, Viewpoints, Model Kinds and Models
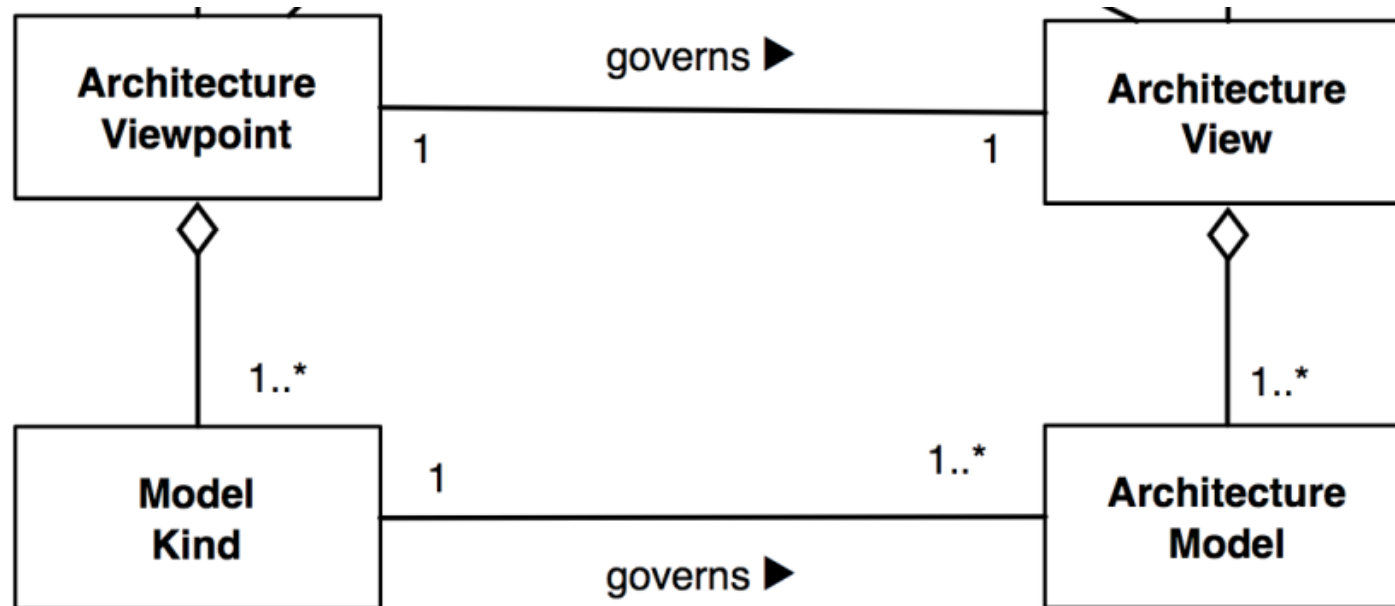
ISO/IEC/IEEE 42010

Model Types in Zachmann

- There are different model kinds for each viewpoint (one model kind per cell)

- There can be different modeling languages to represent a kind of model

- The Architecture Description language consists of the different model kinds used

Organisation model
- org chart

Data model
- UML class
- ERM

Motivation Model
- BMM

Process model
- Flow diagram
- BPMN
- Petri Net

IT model
- IT systems

Workflow model
- BPEL

Views and Viewpoints in ArchiMate

■ In ArchiMate, architects and other stakeholders can define their own views on the enterprise architecture

■ A viewpoint in ArchiMate is a selection of

♦ a relevant subset of the ArchiMate concepts and their relationships

♦ For each viewpoint one model kind exists

■ A view is (a set of) models

♦ representing a part of an architecture

♦ using the concepts and relationships of the corresponding viewpoint

■ ArchiMate is an Architecture Description Language with which all viewpoints can be modeled, i.e. all model kinds for the different viewpoints use concepts and relationships from ArchiMate.

Examples of Stakeholders and Concerns

The following examples of stakeholders and concerns are mentioned in the ArchiMate specification as a basis for the specification of viewpoints:

End Users
- ♦ What are the consequences for his workplace?

Architect
- ♦ What is the consequence for the maintainability of a system?

Upper-level Management
- ♦ How can we ensure that our policies are followed in the development and operation of processes and systems?

Operational Manager – responsible for exploitation or maintenance
- ♦ Is there a need to adapt maintenance processes?

Project Manager – responsible for development of new applications
- ♦ What is the dependence of business processes on the applications to be built?

Developer
- ♦ What are the required modification with respect to the current situation?

Two-Dimensional Classification of Enterprise Architecture Viewpoints

Purpose Dimension

- *Designing*
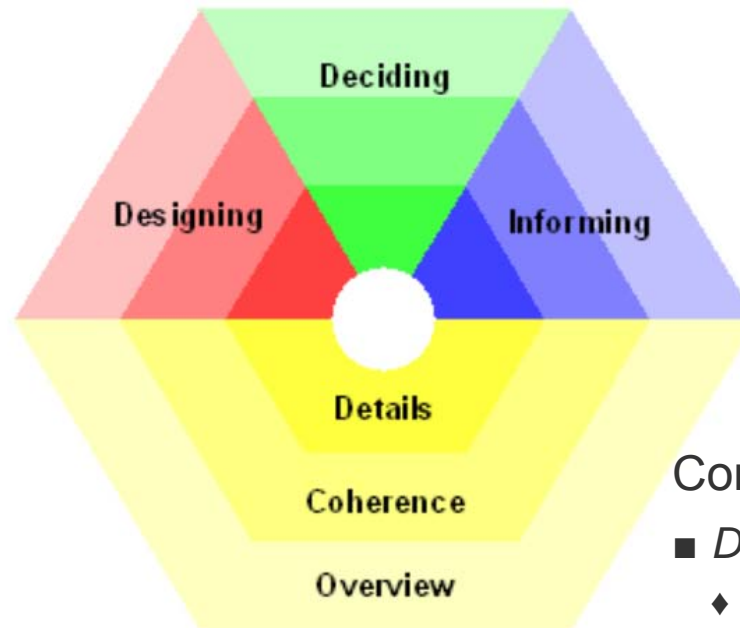 - ♦ Purpose: Design decision, alternatives
  - ♦ Typical stakeholders: architect, software developer, business process designer
- *Deciding:*
  - ♦ Purpose: decision making
  - ♦ Typical stakeholder: product manager, CIO, CEO
- *Informing:*
  - ♦ Purpose: achieve understanding, obtain commitment, convince
  - ♦ Typical stakehodler: customer, employee

Content Dimension

- *Details:*
  - ♦ one layer and one aspect
- *Coherence:*
  - ♦ multiple layers or multiple aspects
  - ♦ focus on architecture relations between layers or aspects
- *Overview:*
  - ♦ both multiple layers and aspects

ADL for Viewpoints

Instead of using the concepts and relationships from ArchiMate, the viewpoints can be modelled also with other lanuages. Here are some examples:

Purpose Dimension

- *Designing*
  - ♦ Examples: UML diagram, BPMN diagram, flowchart, ER diagram
- *Deciding:*
  - ♦ Examples: cross-reference tables, landscape maps, lists, reports
- *Informing:*
  - ♦ Examples: illustrations, animations, cartoons, charts

Content Dimension

- *Details:*
  - ♦ Examples: BPMN process diagram, UML class diagram
- *Coherence:*
  - ♦ Views expressing relationships like "use", "realize" and "assign"
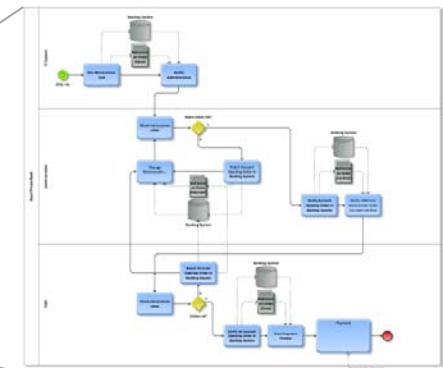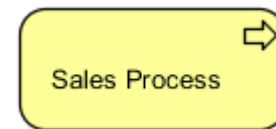 - ♦ Examples: process-uses-system oder application-uses-object
- *Overview:*
  - ♦ Example: landscape map
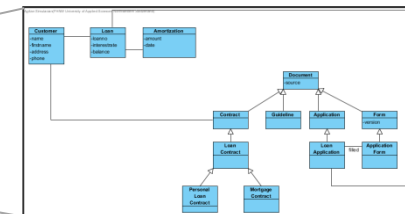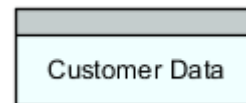
Extending ArchiMate with other Modeling Languages

■ Other modelling languages are particularly used in order for modeling some parts of the architecture in more detail

■ Examples:

♦ Modeling the flow of a process in BPMN

Sales Process

♦ Modeling the data structure of an artifact with UML class diagrams

Customer Data

Classification of Enterprise Architecture Viewpoints: Purpose Dimension

	Typical Stakeholders	Purpose	Examples
Designing	architect, software developer, business process designer	navigate, design, support design decisions, compare alternatives	UML diagram, BPMN diagram, flowchart, ER diagram
Deciding	manager, CIO, CEO	decision-making	cross-reference table, landscape map, list, report
Informing	employee, customer, others	explain, convince, obtain commitment	animation, cartoon, process illustration, chart

Classification of Enterprise Architecture Viewpoints: Content Dimension

	Typical Stakeholders	Purpose	Examples
Details	software engineer, process owner	design, manage	UML class diagram, BPMN process diagram
Coherence	operational managers	analyze dependencies, impact of-change	views expressing relations like "use", "realize", and "assign"
Overview	enterprise architect, CIO, CEO	change management	landscape map