From Frameworks to Objects – Realizing the Enterprise Architecture Framework

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February 03, 2009

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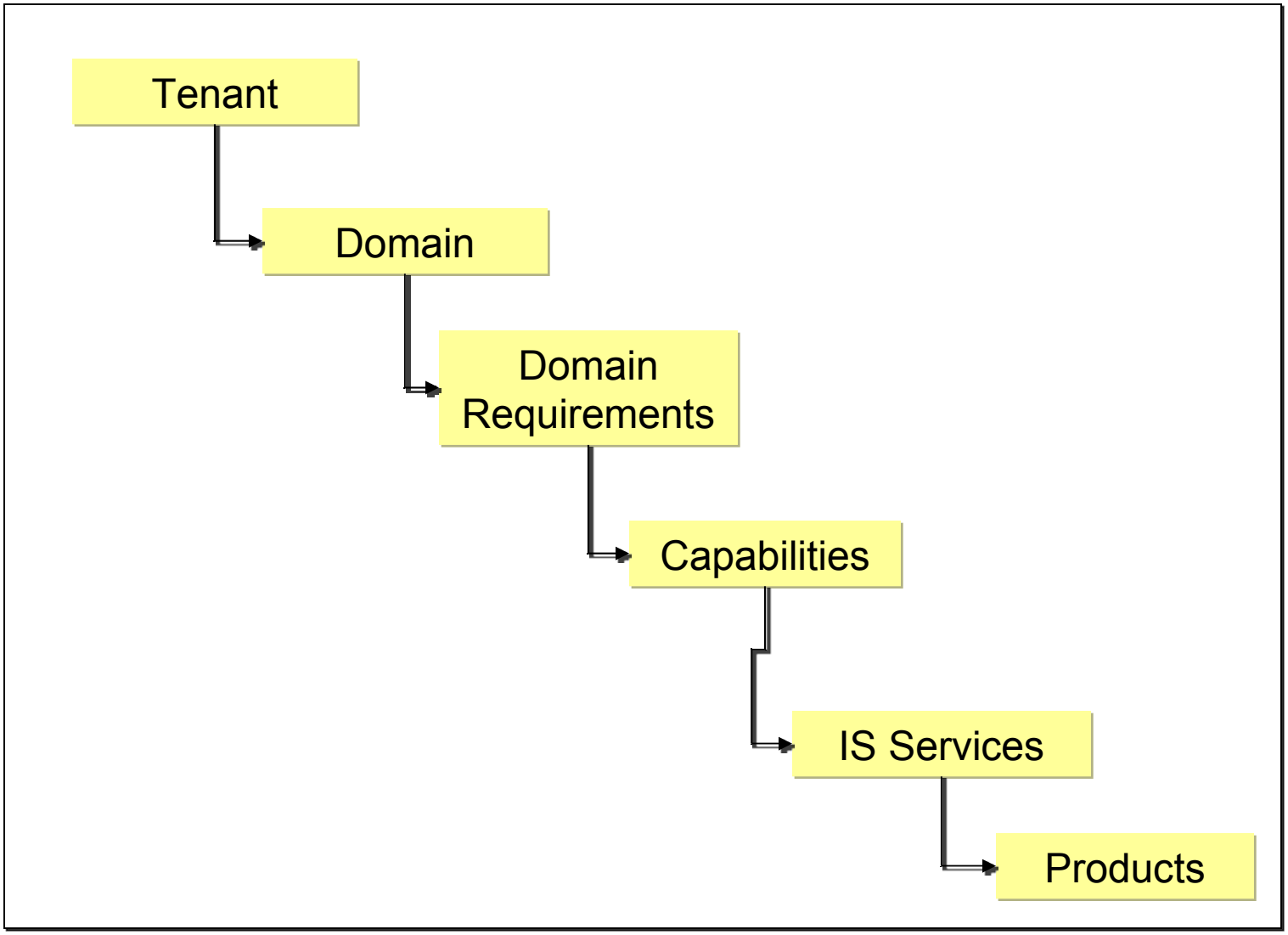
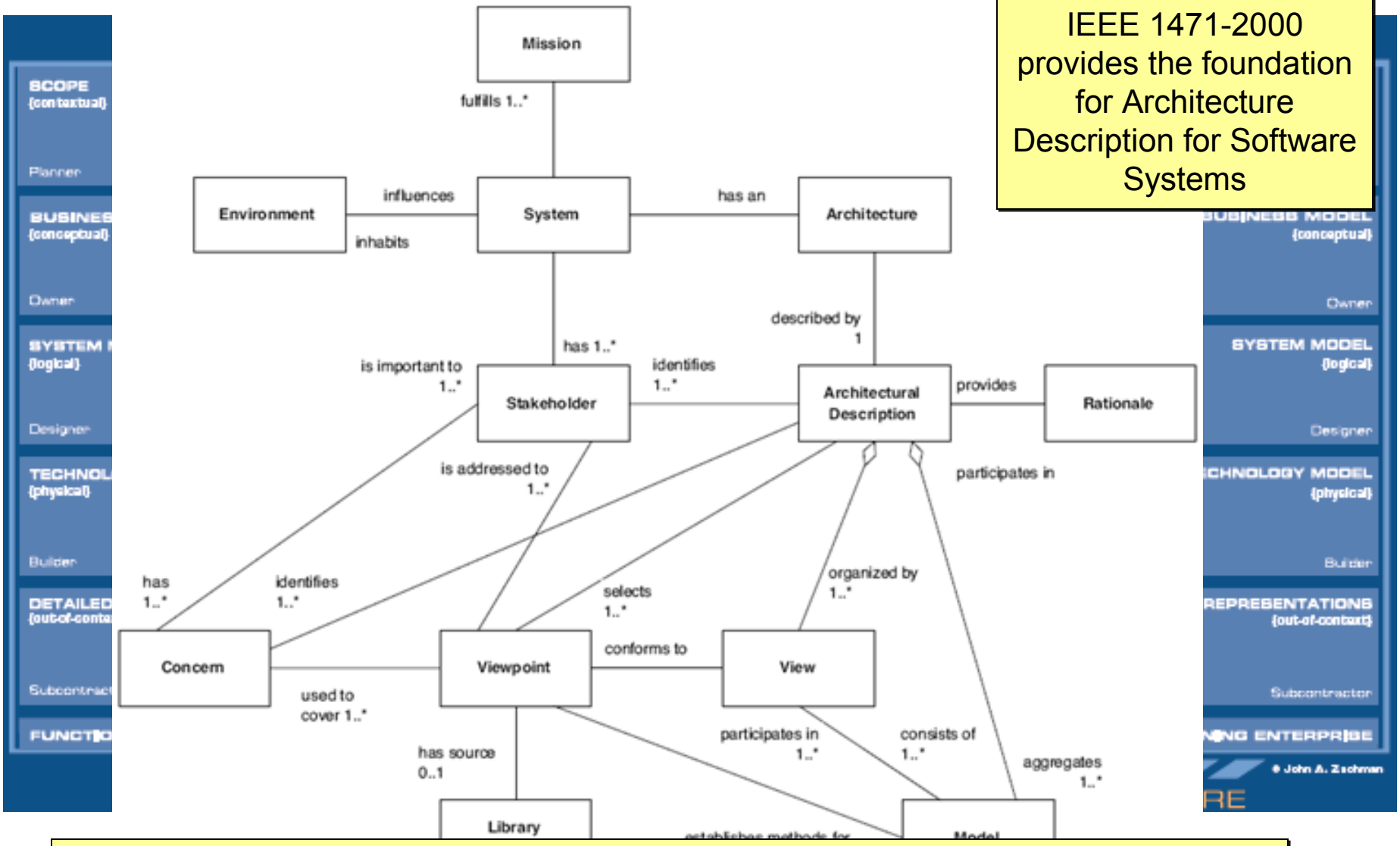
Agenda

- The IT Architecture at Dow
  - The Standards and the “Target”
  - The Framework at Dow
- Realizing the Framework - Concepts:
  - Aggregation Decomposition, Federated & Enterprise, Multiple Tenants
  - What to expect in each view – through the looking glass
- From Data to Information through Technology
  - Methods , Rules, Systems (not products)
  - Transition from One View to Another View

The medium is not the message but the medium does affect the message

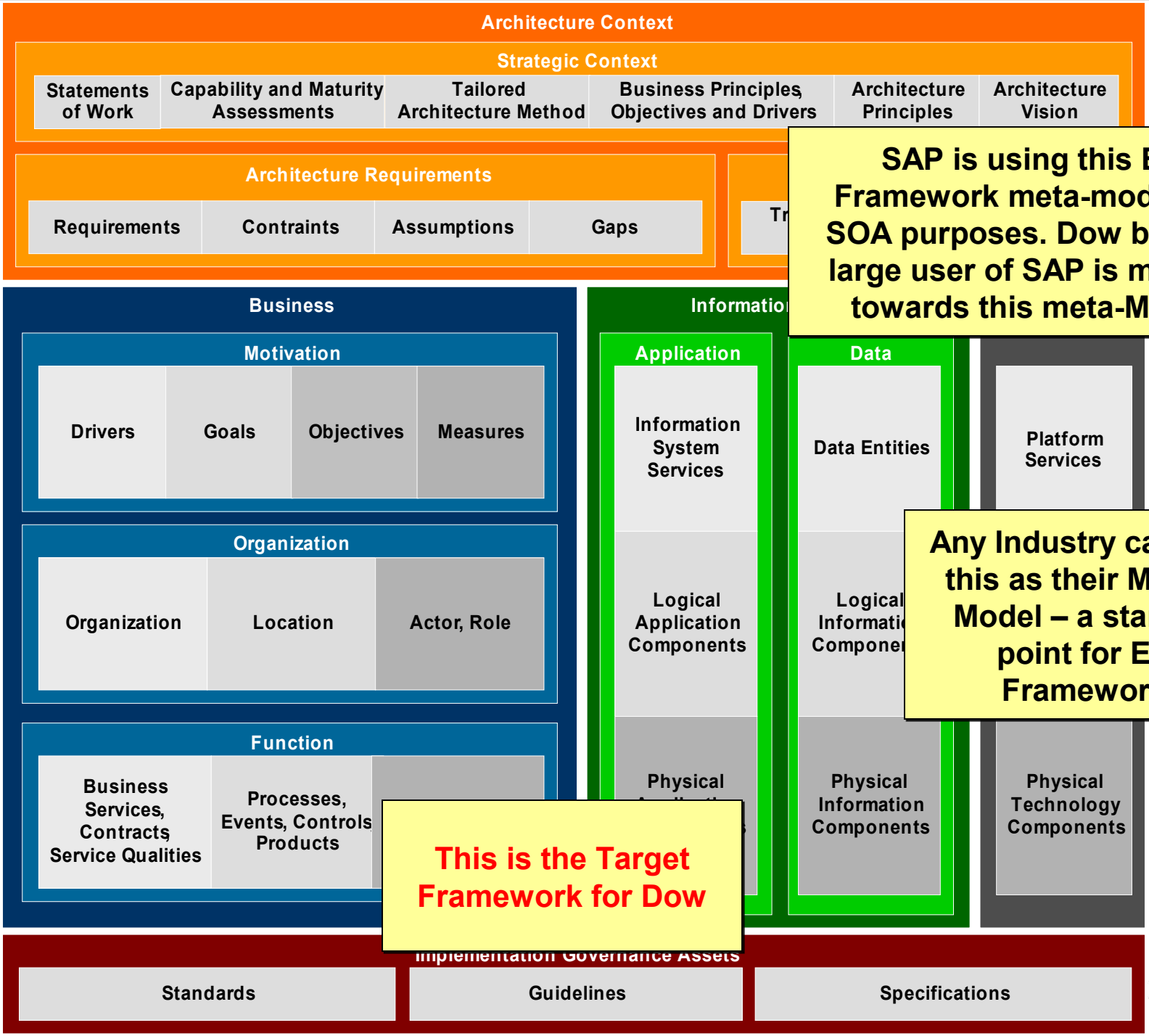

Tenant
Domain
Domain Requirements
Capabilities
IS Services
Products

IEEE 1471-2000 and Zachman Framework



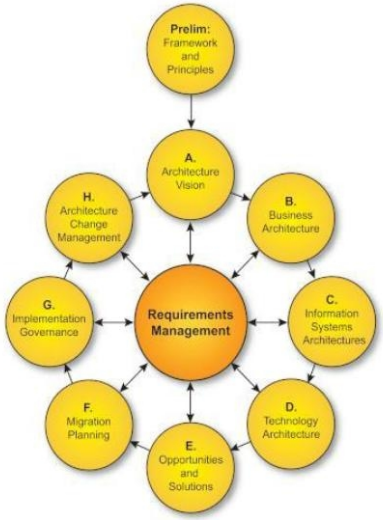
IEEE 1471-2000 provides the foundation for Architecture Description for Software Systems

Zachman Framework is the foundation of all other frameworks like FEAF, TEAF etc.


Architecture Context
Strategic Context
Statements of Work
Capability and Maturity Assessments
Tailored Architecture Method
Business Principles, Objectives and Drivers
Architecture Principles
Architecture Vision
Architecture Requirements
Requirements
Contraints
Assumptions
Gaps
Business
Motivation
Drivers
Goals
Objectives
Measures
Organization
Organization
Location
Actor, Role
Function
Business Services, Contracts, Service Qualities
Processes, Events, Controls Products
Application
Information System Services
Logical Application Components
Physical
Data
Data Entities
Physical Information Components
Platform Services
Physical Technology Components
Implementation Governance Assets
Standards
Guidelines
Specifications
SAP is using this EA Framework meta-model for SOA purposes. Dow being a large user of SAP is moving towards this meta-Model
Any Industry can use this as their META-Model – a starting point for EA Framework
This is the Target Framework for Dow

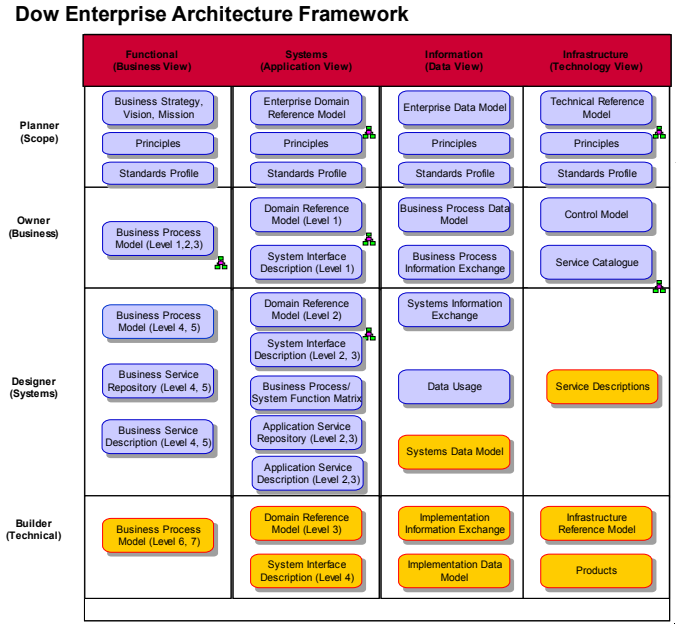
Enterprise Architecture Approach

- Dow Enterprise Software Vendors is adopting TOGAF

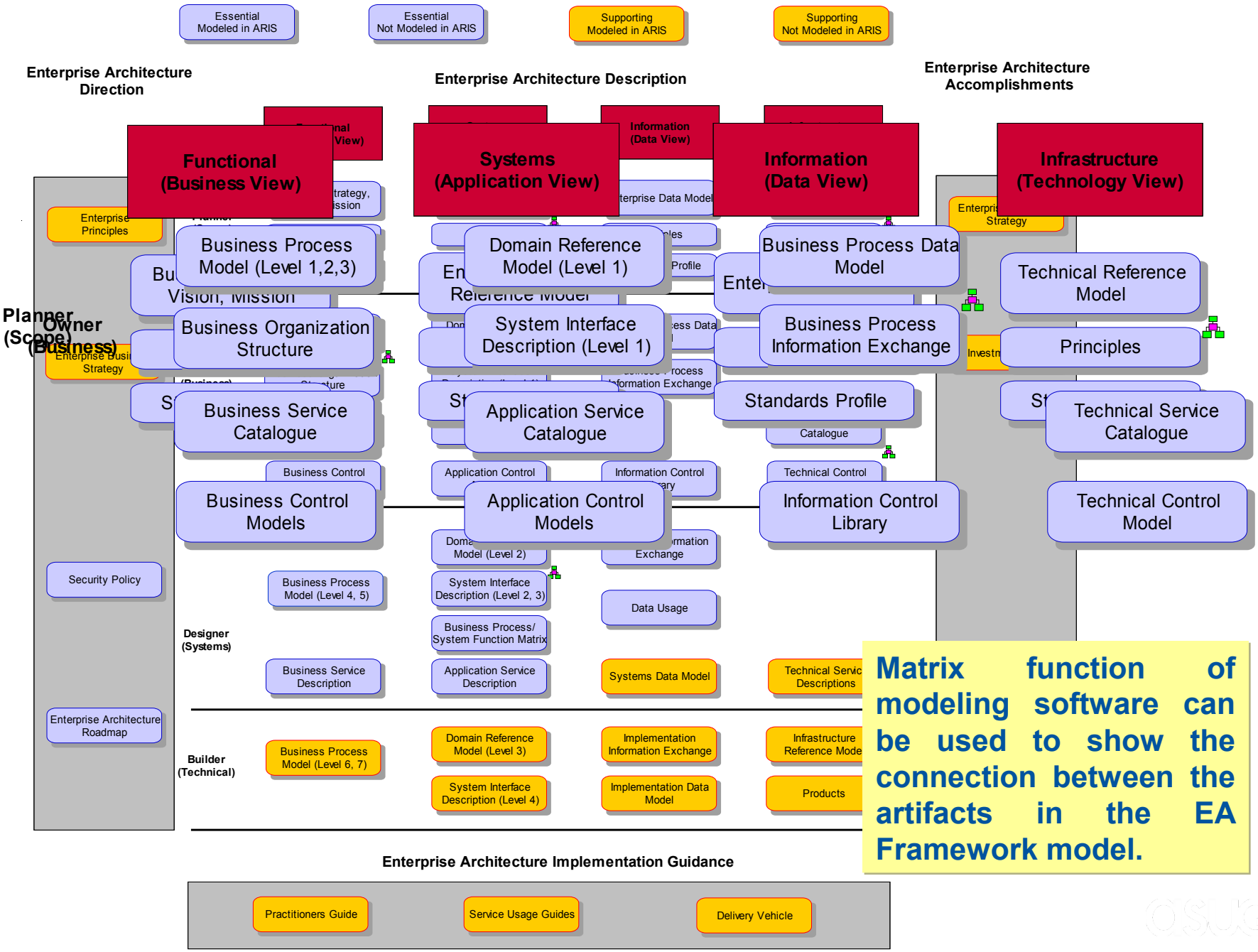


Very similar

- Dow has developed EAF based on TIAF

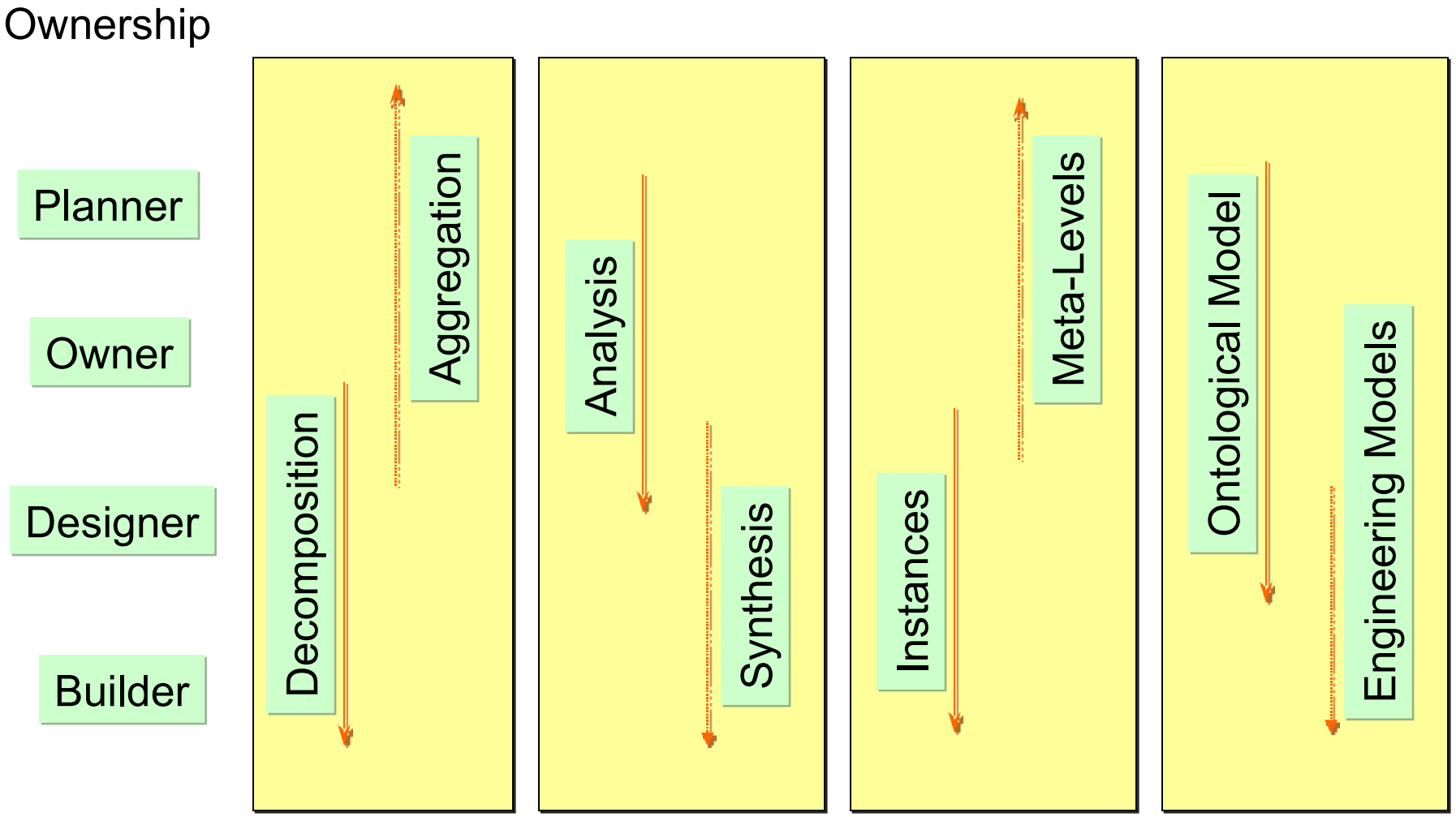


Dow Enterprise Architecture Framework

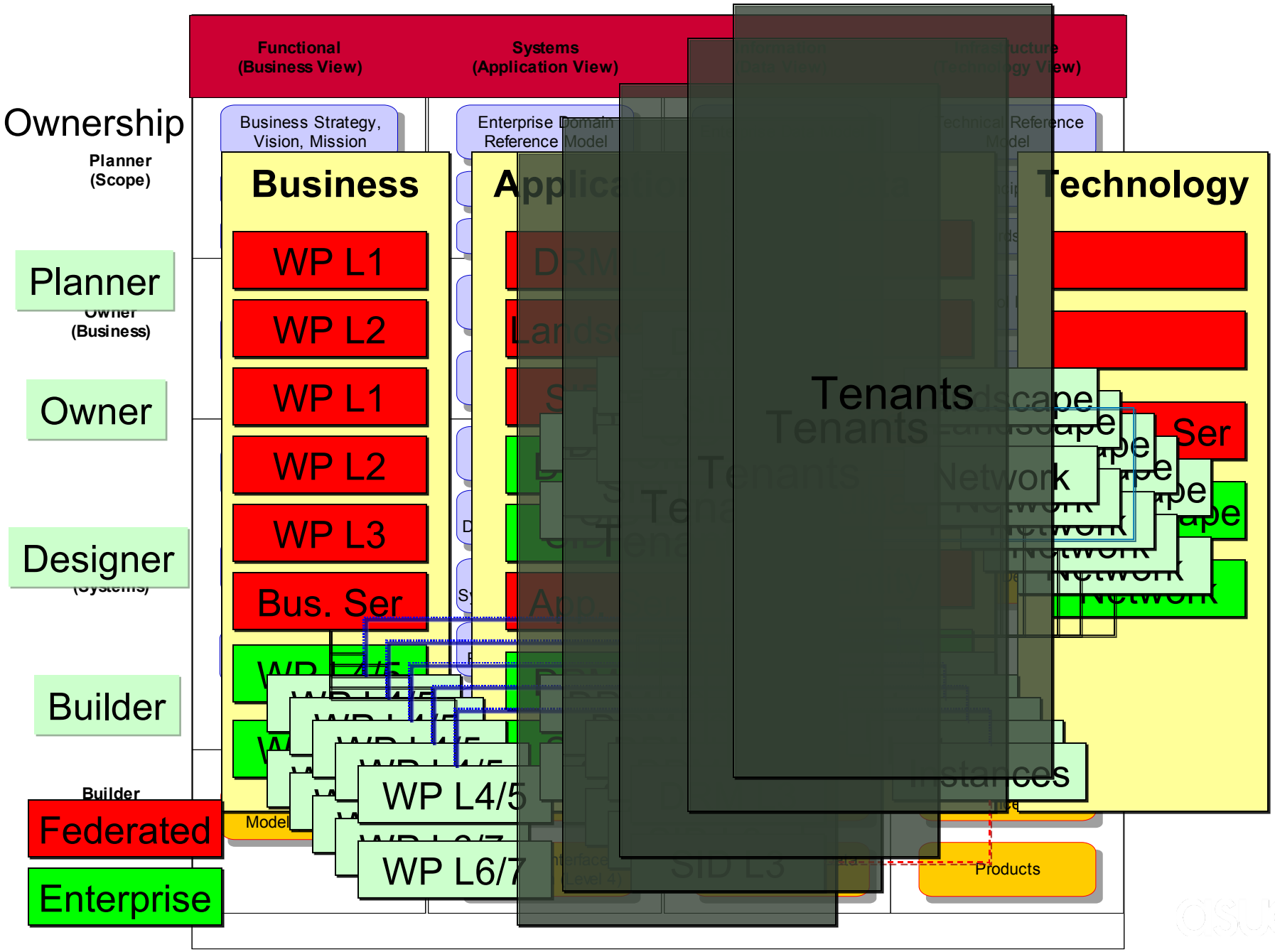


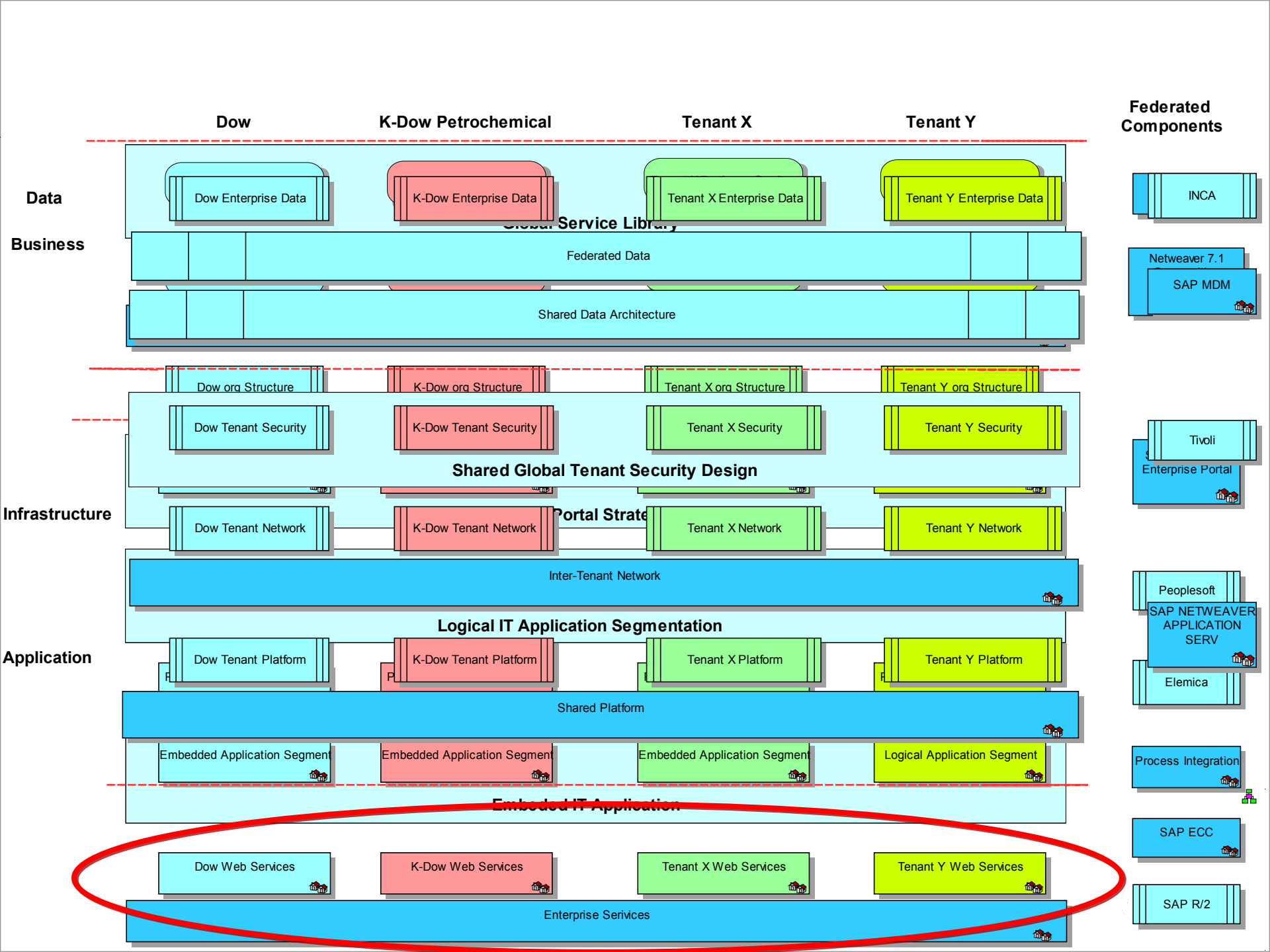
Matrix function of modeling software can be used to show the connection between the artifacts in the EA Framework model.

Dow Enterprise Arch. Framework



Dow Enterprise Architecture Framework




Dow
K-Dow Petrochemical
Tenant X
Tenant Y
Federated Components
Data
Business
Infrastructure
Application
Dow Enterprise Data
K-Dow Enterprise Data
Tenant X Enterprise Data
Tenant Y Enterprise Data
Federated Data
Shared Data Architecture
Dow org Structure
K-Dow org Structure
Tenant X org Structure
Tenant Y org Structure
Dow Tenant Security
K-Dow Tenant Security
Tenant X Security
Tenant Y Security
Shared Global Tenant Security Design
Dow Tenant Network
K-Dow Tenant Network
Tenant X Network
Tenant Y Network
Inter-Tenant Network
Logical IT Application Segmentation
Dow Tenant Platform
K-Dow Tenant Platform
Tenant X Platform
Tenant Y Platform
Shared Platform
Embedded Application Segment
Embedded Application Segment
Embedded Application Segment
Logical Application Segment
Dow Web Services
K-Dow Web Services
Tenant X Web Services
Tenant Y Web Services
Enterprise Serivices
INCA
Netweaver 7.1
SAP MDM
Tivoli
Enterprise Portal
Peoplesoft
SAP NETWEAVER APPLICATION SERV
Elemica
Process Integration
SAP ECC
SAP R/2

Development of Models as PDM content

Project Deliverables

Data Models

Business Process

Value Chain

Activities

Derivatives

Domain Reference Model Capability, Req.

Activity Detail

Derivatives

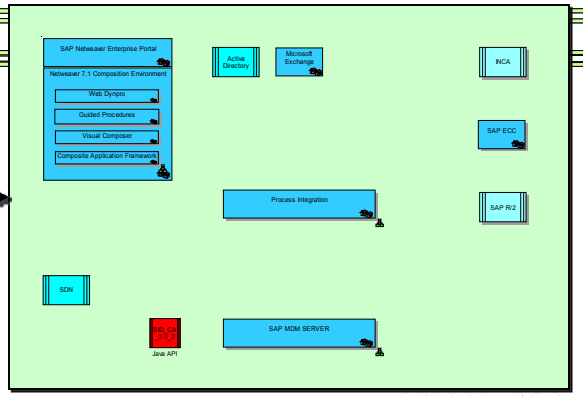
Application & Systems Model

Business Model

Enterprise Architecture Framework

	Functional (Business View)	Systems (Application View)	Information (Data View)	Infrastructure (Technology View)
Planner (Scope)	Business Strategy, Vision, Mission Principles Standards Profile	Enterprise Domain Reference Model Principles Standards Profile	Enterprise Data Model Principles Standards Profile	Technical Reference Model Principles Standards Profile
Owner (Business)	Business Process Model (Level 1,2,3)	Domain Reference Model (Level 1) System Interface Description (Level 1)	Business Process Data Model Business Process Information Exchange	Control Model Service Catalogue
Designer (Systems)	Business Process Model (Level 4, 5)	Domain Reference Model (Level 2) System Interface Description (Level 2, 3) Business Process/ System Function Matrix	Systems Information Exchange Data Usage Systems Data Model	Service Descriptions
Builder (Technical)	Business Process Model (Level 6, 7)	Domain Reference Model (Level 3) System Interface Description (Level 4)	Implementation Information Exchange Implementation Data Model	Infrastructure Reference Model Products

Application, Technical Models



Workflow Definitions

Level

Level

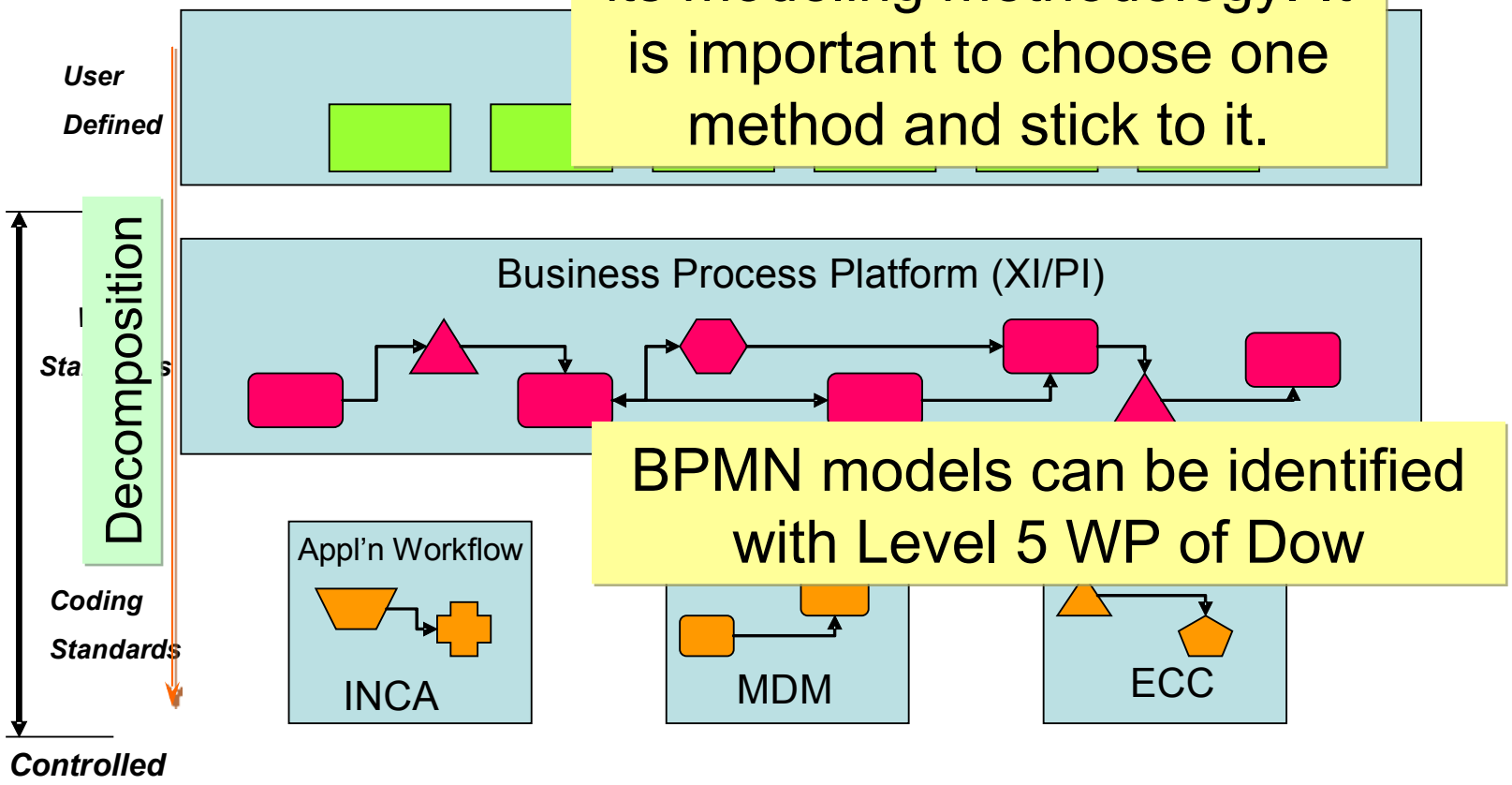
Level

Level

Level

Level

Dow has chosen BPMN as its modeling methodology. It is important to choose one method and stick to it.



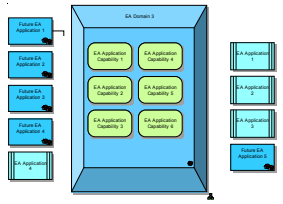
BPMN models can be identified with Level 5 WP of Dow

DOW RESTRICTED - For internal use only

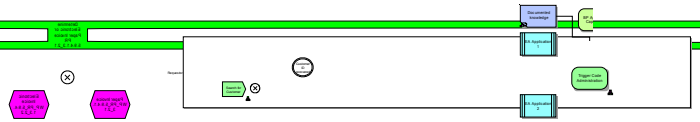
Guidance on Model Types

- The 3 types of modeling we would like to accomplish

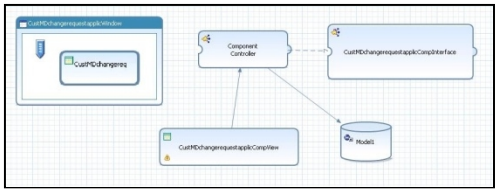
  - **Descriptive** (Dow Level 0 to 4)
    - Value Chains, Motivation Models, Frameworks, Domain Models

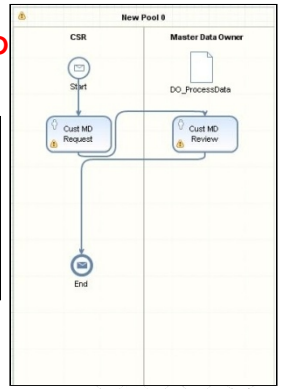


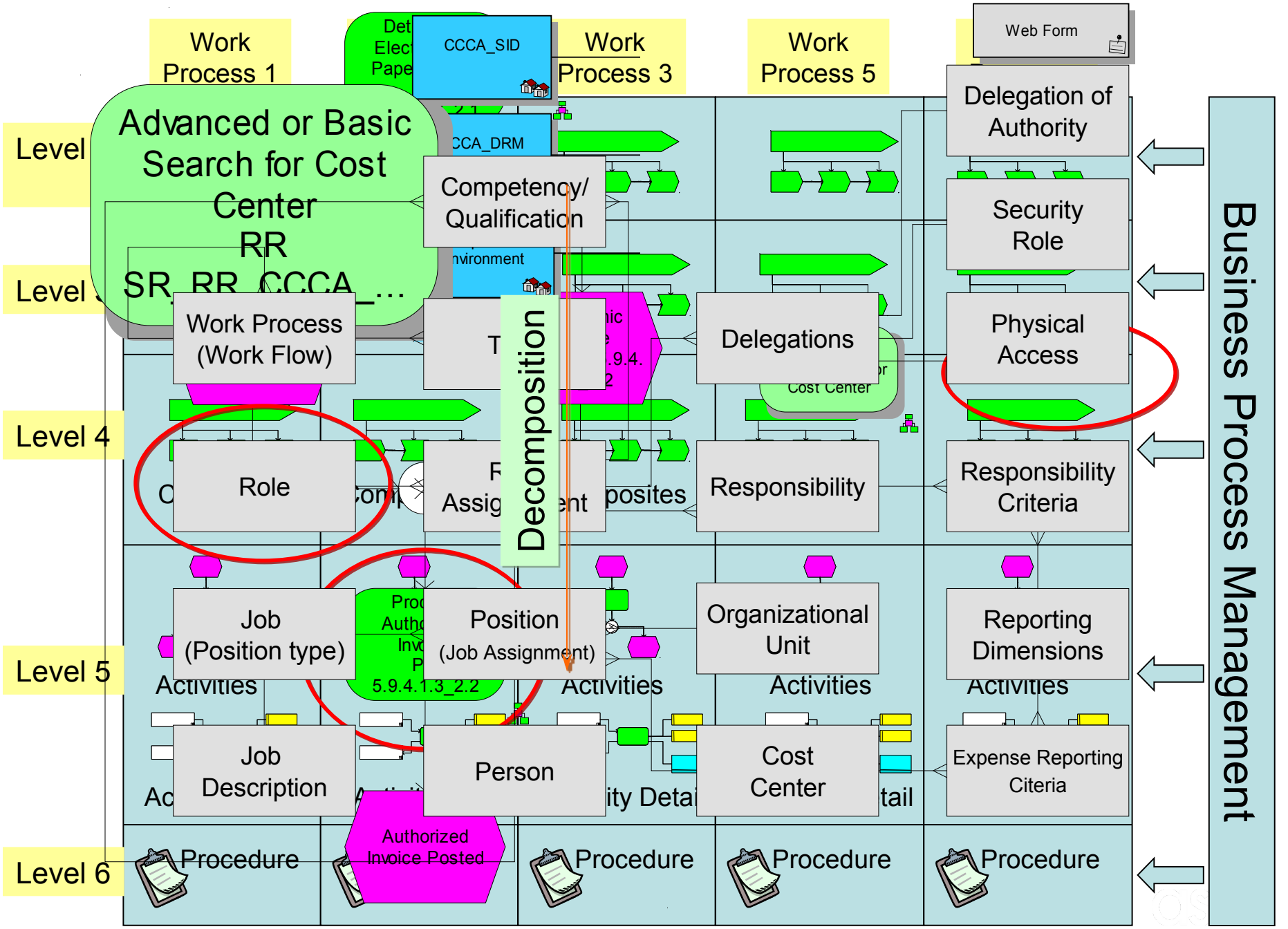
  - **Analytical** (Dow Level 5)
    - Detailed Activity level model with



  - **Executable** (Derivatives of Dow Level 5 & Dow level 6)
    - BPML models with BPEL attributes tied to services and application landscap
    - BPEL Models with Services and WSDL






Work Process 1
Work Process 3
Work Process 5
Web Form
CCCA_SID
CCA_DRM
Advanced or Basic Search for Cost Center
RR
SR_RR_CCCA_...
Competency/ Qualification
Delegation of Authority
Security Role
Physical Access
Work Process (Work Flow)
Delegations
Decomposition
Level 4
Role
Responsibility
Responsibility Criteria
Level 5
Job (Position type)
Position (Job Assignment)
Organizational Unit
Reporting Dimensions
Activities
Activities
Activities
Activities
Job Description
Person
Cost Center
Expense Reporting Citeria
Level 6
Procedure
Authorized Invoice Posted
Procedure
Procedure
Procedure
Business Process Management

Planners, Owners define the domain's broad capabilities.

From Specific to General

From Business to Application

Capabilities must be supported by Applications.

Capability and Domain Aggregation in Application Column

Work Process 5

Work Process n

Search

Enrich

Update

Create

Approve

Post

Notification

Syndicate

Aggregation

Aggregation

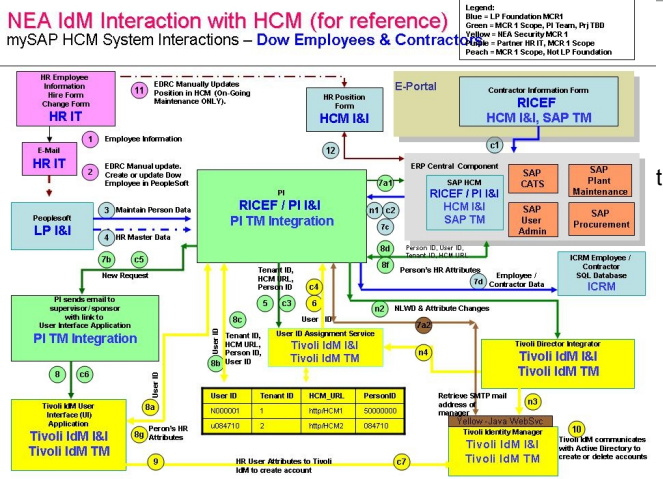
Business Process Management

Composites

Procedure

Procedure

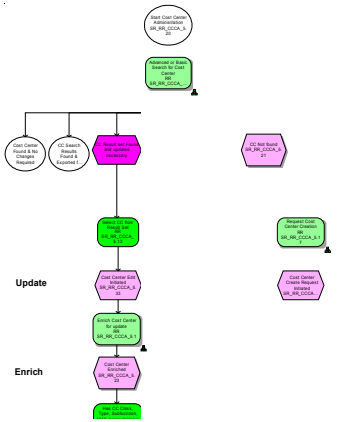
Dow Enterprise Architecture Framework



t Dow's technical infrastructure drawing

Active Directory

Microsoft Exchange



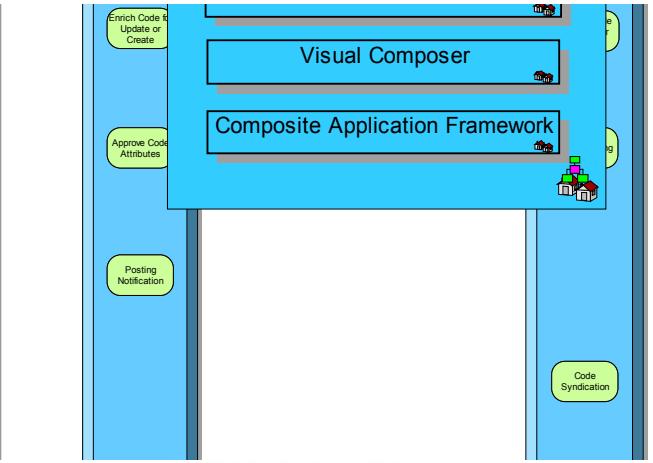
INCA

SAP ECC

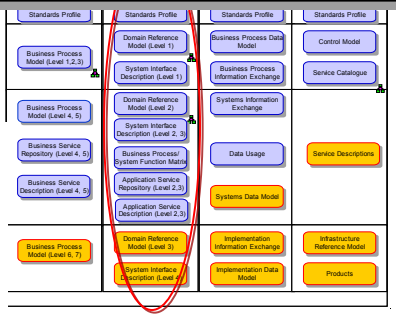
SAP R/2

From Business to Application

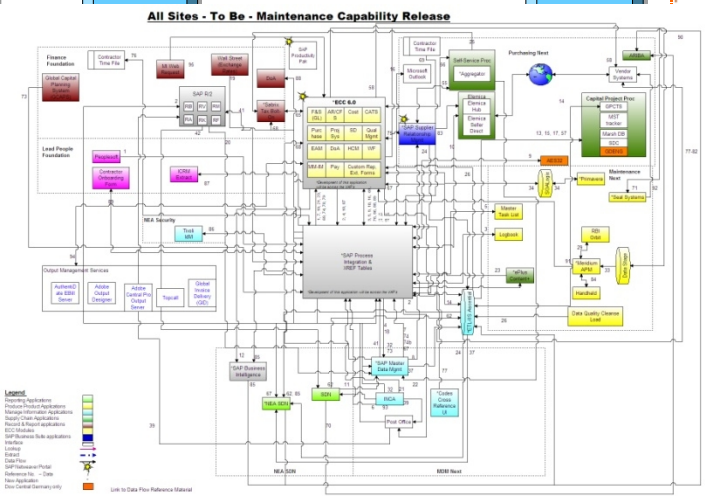
Aggregation

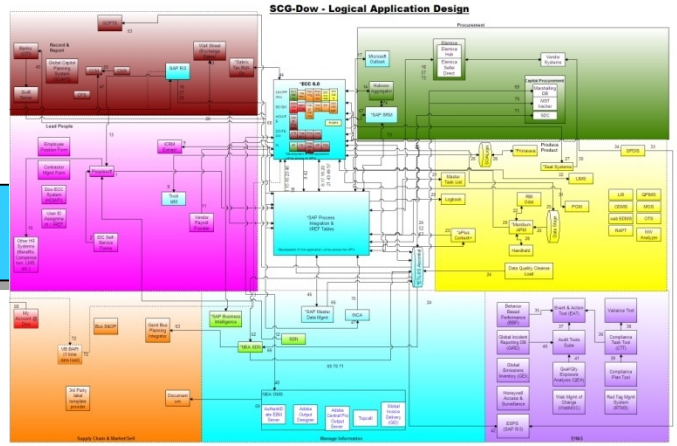


Process Integration



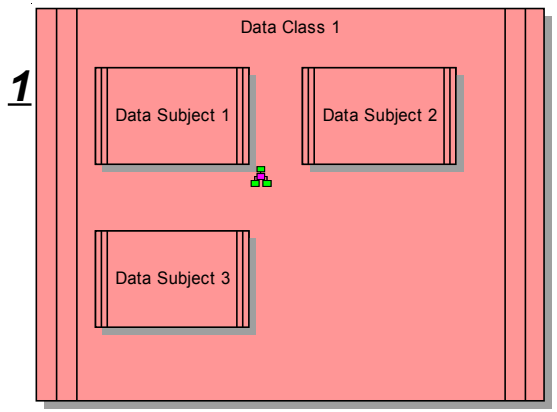
SAP MDM SERVER



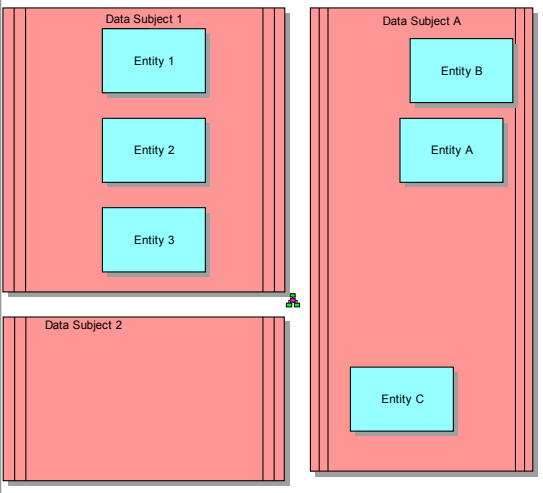


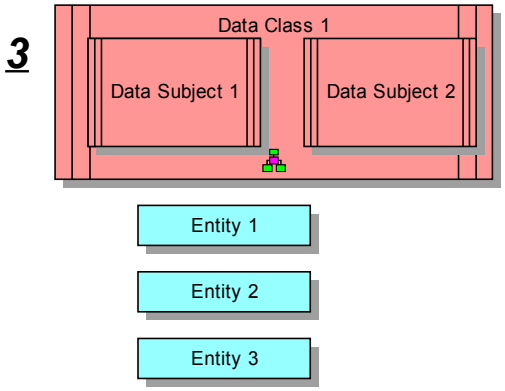
Data Model (Data View) (Mostly Federated)

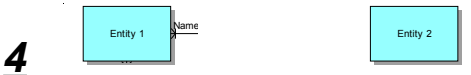
Data Class Models
Data Subject Models
Data Entity Models



1. Inter-relationship between Data Classes
2. Relationship between Data Subjects within Classes
3. Relationship between Data Subjects and Entities
4. Relationship between Data Entities within different Subjects

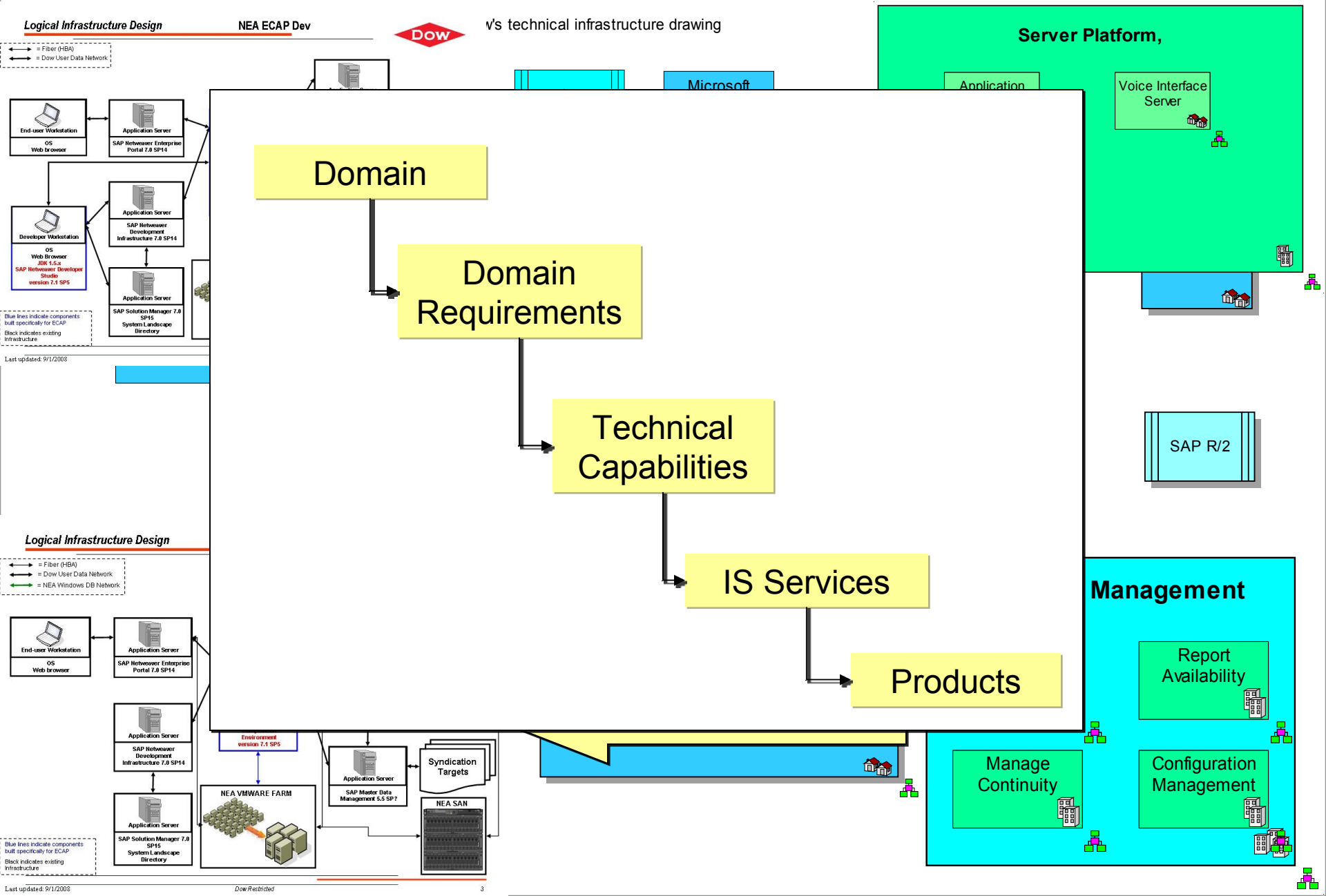






The relationship between classes, subjects and entities help convert data to information

Technical Models (Technical View)



Questions ?