

# Building Block Relationships: A Model based on SAP Enterprise Architecture Framework

## Applies to:

SAP Enterprise Architecture Framework

## Summary

In a nutshell, Enterprise Architecture (EA) Framework can be defined as a collection of methods & processes that enables an enterprise to transform from its current or “as-is” architecture to a strategic or “to-be” architecture. SAP has developed its own EA Framework with the traditional four domains (business, information, application & technology) and a set of building blocks for each of the domains. This paper is an attempt to better describe the relationship among all the building blocks of SAP EA Framework.

**Author(s):** Sri Rajagopalan and Supporting Contributions from Alain Dumas

**Company:** SAP America, Inc.

**Created on:** 4 December 2006

## Author Bios

### **Sri Rajagopalan, SAP America Inc.**

Enterprise Architect, ESOA/Net Weaver National Competency Center

Sri Rajagopalan recently joined SAP America, Inc as an Enterprise Architect. Prior to SAP, he has been an Enterprise Solution Architect for over the last seven years in the Hi-Tech industry where he has provided application, business process and data integration solutions for many global initiatives of a PC sales and manufacturing company. He holds a Master’s degree in Engineering from Lamar University, Beaumont Texas. He is also an Open Group Certified “Master IT Architect”.

### **Alain Dumas, SAP America Inc.**

Enterprise Architect, ESOA/Net Weaver National Competency Center

Alain Dumas has been a solution architect and project lead within the aviation industry for the last 4 years where he has lead many messaging projects for the world’s largest airlines, including the design of a new XML based messaging protocol called TypeX. Alain holds a Bachelors of Computer Science from the University of Montreal and a Bachelors of Engineering from the University of Ottawa. He is also a Certified IBM Infrastructure System Architect (ISA). Alain lives in the quiet suburb of Odenton, Maryland where the few hours he spends away from his work are made bearable by dreams of owning property in warmer climates.

## Table of Contents

Executive Summary.....	3
Purpose and Background .....	3
Introduction .....	3
Building Block- Definition and Attributes .....	4
Overall Building Block Relationships .....	7
Usage of the Relationship Model.....	8
Relationship Matrix .....	8
Perspectives/Views .....	8
Rows .....	8
Columns .....	8
BB Relationships – High level.....	9
Building Block Relationships – Detail View .....	10
Planner’s (Scope) Perspective/Identification View .....	10
Owner’s (Enterprise) perspective/Conceptual or Semantic View .....	12
Designer’s (System) Perspective/Logical Definition View .....	14
ARIS Modeling.....	15
Model Elaboration (Examples) .....	15
Example 1 .....	15
Example 2 .....	16
Step 1 .....	17
Step 2 .....	18
Step 3 .....	19
Step 4 (Alternate) .....	19
Related Content.....	20
Copyright.....	21

## Executive Summary

SAP EA Framework is patterned on TOGAF and it describes an enterprise to be made up of four key domains namely, Business, Information, Application and Technology domains. Each of these four domains contains its own set of Building Blocks (BB). This whitepaper is an effort to describe each building block within the business domain in detail and its relationship to the other three domains. In an ideal sense, it is believed that IT and technology architecture should be driven by the business architecture.

This paper considers business domain as an anchor, and contains an approach to build a holistic view of the all the building blocks across the domains. So the building block relationship model will enable the business process community experts (BPX) to get a holistic perspective of the enterprise from business process viewpoint. In addition, this paper also attempts to describe the relationships from the view point of the top three perspectives provided within the Zachman's Framework namely Planner, Owner and Designer. These three perspectives are highly critical from Enterprise architecture point of view and in turn for an Enterprise Architect's role.

## Purpose and Background

This paper is an attempt to better describe the relationship among all the building blocks of SAP EA Framework. The relationship is described as a model and explains how SAP EA Framework bridges the Business and IT domains successfully. The relationship model depicts how the Building blocks of business domain relate to the other three domains. In addition, the model also describes the impact of business domain on other EA domains from the three perspectives provided by Zachman framework. The perspectives considered in this paper are very critical from an Enterprise Architect's point of view and they include Planner/Scope, Owner/Enterprise and Designer/System perspectives. Making external reference to a familiar EA Framework in the industry would enable a common understanding among Enterprise Architects and result in wider acceptability of SAP EA Framework. The current version of SAP EA Framework as modeled by ARIS predominantly consists of relationships between any two building blocks (within & across EA domains) in a two dimensional model. Besides, the relationship mostly pertains to "scope" perspective of Zachman Framework. So this paper is an enhancement to the current building block relationships and extends it to include "enterprise & system" perspectives of Zachman Framework. Finally, this paper could serve as another artifact that can be added to SAP EA Framework's Repository.

## Introduction

Ideally within an Enterprise Architecture Framework, business domain or business architecture is the prerequisite to work in any of the other three EA domains. It also becomes mandatory to understand the business domain/architecture in detail in order to evaluate the business value of the efforts in other three EA domains. But in real life enterprise architecture work effort may not always begin with the analysis of business domain/architecture. The good news is that SAP's EA Framework, offers that flexibility and prescribes that EA work can start the analysis from any of the four domains and provides for a method to evaluate and determine the impacts of a specific domain on other three domains.

For the purposes of this paper, let us assume we start with the business domain and it becomes necessary to lay the ground rules for that domain. On that basis, let us start with the definition of the key building blocks within business domain and their key attributes. The table below is a high level summary of the definition and attributes. Please note that the table is not an all inclusive summary.

### Building Block- Definition and Attributes

Business domain Building Block	Definition	Attributes
Business Goals	High level statements that clearly define the actions to be taken by an enterprise to achieve its future desired condition. Goals form the basis for directing the business efforts, such as Enterprise Architecture, towards achieving them. Goals should be mapped directly to the business mission and explain “how” the enterprise mission can be accomplished.	<ul style="list-style-type: none"> <li>• Business description</li> <li>• Has stakeholders vision</li> <li>• Incurs cost</li> <li>• Has business purpose</li> <li>• Supported by initiative</li> </ul>
Business Objectives	Objectives establish measurable criteria for the goals. A business goal can be supported by multiple objectives. Business objectives should be specific, measurable, actionable, results oriented and time bound (SMART) and should directly align with the enterprise’s Goals.	<ul style="list-style-type: none"> <li>• Business description</li> <li>• Tasks, actions</li> <li>• Has quantified measures and metrics</li> <li>• Has timeline</li> <li>• Constraints</li> <li>• Strategy</li> <li>• Supported by initiative</li> </ul>
Business Principles & Constraints	They establish the guidelines and boundaries to guide the enterprise towards a future desired condition. In this context, the future condition is the enterprise’s strategic “to-be” architecture.	<ul style="list-style-type: none"> <li>• Business description</li> <li>• Business implications</li> </ul>
Business Units (BU)	The top down organization of the enterprise which will form the basis of the EA analysis of the enterprise (as-is & to-be). Depending upon the context and the scope of work effort a business unit could be considered an enterprise and the analysis of all the EA domains can be done for a single business unit.	<ul style="list-style-type: none"> <li>• Name &amp; Identifier</li> <li>• Position in the Org structure (parent &amp; child)</li> <li>• Has Executives</li> <li>• Has P/L and budget allocation</li> <li>• Has assets (Human resources and IT)</li> <li>• Supported by core processes</li> </ul>

<p>Business locations</p>	<p>The locations the enterprise currently operates from. This could include geographical distribution of an enterprise's branch offices, subsidiaries, customer support centers, sales outlets, manufacturing plants and warehouses etc.</p>	<ul style="list-style-type: none"> <li>• Name</li> <li>• Logical &amp; physical identifiers (address, telephone etc)</li> <li>• Has assets &amp; resources (real estate, humans, IT, equipment etc)</li> </ul>
<p>Business Capabilities</p>	<p>These describe "what" business functions the business is capable of performing.</p>	<ul style="list-style-type: none"> <li>• Business Name</li> <li>• Business description</li> <li>• Quality, Scope</li> <li>• Supported by processes, applications and technology</li> </ul>
<p>Business Processes</p>	<p>If the capabilities describe the "what", then business processes are "how" a business carries out or executes its capabilities. Business processes produce a specified and defined business result. At the operational level, a business process is executed by a set of people (business roles) with or without the support of IT applications which provide functionality to automate specific steps in the business process. It is important to note that business capabilities could be common across several enterprises within a specific industry type (for ex. Hi-tech) but fulfilling a capability at a process level could be very different from one enterprise to another. In other words, business processes could serve as a key differentiator for an enterprise.</p>	<ul style="list-style-type: none"> <li>• Business Name</li> <li>• Defined inputs</li> <li>• Defined outputs</li> <li>• Repeatability</li> <li>• Performs business tasks</li> <li>• Has roles</li> <li>• Cycle time (duration)</li> <li>• Position in enterprise's process framework</li> </ul>
<p>Business Stakeholders</p>	<p>Stakeholders are business roles within the enterprise who have a vested interest or stake in the outcome of any business effort, initiative or undertaking such as enterprise architecture initiative. Business stakeholders internal to the enterprise can be classified as Strategic, Operational and Technical stakeholders. It is important to note that each domain within SAAF should be represented by their respective class of the stakeholders. Typical external stakeholders include customers &amp; suppliers.</p>	<ul style="list-style-type: none"> <li>• Business name</li> <li>• Has functional responsibility</li> <li>• Carry a contextual role</li> </ul>
<p>Business Roles</p>	<p>The actions and activities assigned to, required or expected of a person or group within the enterprise. People could assume a business</p>	<ul style="list-style-type: none"> <li>• Name</li> </ul>

	<p>role for an extended period of time or based on the context of the effort (such enterprise architecture work) they could assume a certain role for the period of the effort.</p>	<ul style="list-style-type: none"> <li>• Job description</li> <li>• Defined skill set</li> <li>• Contextual responsibilities</li> </ul>
<p>Business drivers</p>	<p>Business drivers are the change agents for an enterprise and essentially can be considered as external to the architecture framework.</p>	<ul style="list-style-type: none"> <li>• Business description</li> <li>• Has triggers (external or internal events)</li> <li>• Has constraints</li> </ul>
<p>Business Risks</p>	<p>The quantifiable likelihood of loss or less-than-expected returns of business value. Business risks are very key external influencing factors on enterprise architecture and can have profound impact. They can pave way to requirements that demand business capabilities to minimize risks or drive the need for introduction or acquisition of newer capabilities.</p>	<ul style="list-style-type: none"> <li>• Business description</li> <li>• Negative impact on business (quantified by revenue, time, resources)</li> <li>• Has a State (accepted, mitigated, avoided, transferred and eliminated)</li> </ul>



## Usage of the Relationship Model

At a minimum this model can be used as a tool or checklist of all the things that need to be considered in an EA engagement in order to gain a holistic perspective of the enterprise. The model is depicted as a matrix and it enables the EA to start from any cell and move up/down or left/right to gain the enterprise wide perspective of all the EA domains. This model can also help to establish enterprise wide traceability of each building block both within one domain and across domains. The model is intended to be used during the “Define” phase of SAP EA Framework while conducting both “as-is” and “to-be” analysis. The output from this model can be a valuable input to the “Plan” phase of SAP EA Framework. Finally, the model can be used as a mechanism during service modeling to verify the completeness of Service identification.

## Relationship Matrix

The BB relationship matrix can be thought of a Meta model (model about models). The model is intended to support the Define phase of ADC (Architecture Development Cycle) with in SAP EA Framework. The matrix can be used in both the “as-is” and “to-be” analyses of the EA domains. One of SAP EA Framework’s features is the flexibility to start the analysis from any of the four domains and studying or evaluating of the impact of that domain on the other three domains. The intent here is that the relationship matrix aligns with that feature and regardless of which column or row we start from, the Enterprise Architect can go left or right and up or down the matrix to get a holistic view of all the building blocks across the domains of the Enterprise. The building block relationship framework is laid out as a matrix for each of the three perspectives and within a single perspective for each of the three EA domains. The elements of the matrix are

### Perspectives/Views

The building block relationships are analyzed in detail for three different perspectives or views namely (i) The planner’s perspective (Identification view) provides a clear description of the scope of the enterprise architecture effort. This view is a high level listing and identification of each of the objects or entities that make up each building block within the domains. (ii) The owner’s perspective (Conceptual view) deals more with the conceptual and semantic model of the objects and entities of the building blocks and finally (iii) the designer’s perspective (Definition view) lays out the logical and business definition of the entities/objects of the building blocks.

### Rows

Each row presents a complete picture of the relationship between a business domain BB and other three domains for that perspective. As we move from one perspective to another, each row should provide a more detailed description.

### Columns

Each column in the framework describes how each business domain building block relates to & translates to the specific domain represented by the column. It is important to note it is not necessary that each and every BB should be described for each and every perspective. Some BBs may be applicable for only one perspective while other BBs are applicable to more than one perspective.

The relationship matrix is described at a high level in this section and detailed level in the subsequent section.

## BB Relationships – High level

Business BB/Perspective	Planner/Scope (Identification)			Owner/Enterprise (Conceptual)			Designer/System (Logical Definition)		
	Information	Application	Technology	Information	Application	Technology	Information	Application	Technology
Units	List of enterprise Information Objects per BU	List of enterprise applications per BU	List of enterprise technology elements per BU	List of business information executive of each BU impacted	List of application owners by BU	List of Technology owners by BU	Information management strategy & design point per BU	Key functional design point of each BU	Key Infrastructure design point of each BU
Locations	List of information locations (Produce, consume & archive)	List of application locations (Internal user access points)	List of technology locations	Information logistics diagram (flow of information across business units/locations)	Enterprise application topology by Geo (with location characteristics)	Enterprise technology topology by Geo (with location characteristics)	Define source systems, transactional and historical systems (System of origin, Record & Reference)	Development centers, Resource location, Testing & Staging environment	Hosting locations (Sandbox, Staging & Production), data centers, User access points etc
Capabilities	List & classification of information objects per business capability	List of enterprise applications per business capability	List of enterprise technology elements per business capability	Information world model with its associated information types per business capability	Application architecture landscape per capability (depict the boundaries)	Technology architecture landscape at the capability level	Information type business specifications	Application architecture with interface specifications	Network and application technology definition
Processes	List of information objects that support each process	List of enterprise applications per business process	List of technology elements per business process	Information services model	Application services model	Technology architecture landscape at the business process level	Information exchange matrix per process and Information type detailed specification	Functional, interface & information specifications, interfaces	Detailed definition of network and technology architecture
Stakeholders	List of information stakeholders (strategic, operational & technical)	List of application stakeholders (strategic, operational & technical)	List of Technology stakeholders (strategic, operational & technical)	Business Transformation Executives, BU Executives, Strategy Executives	Business Transformation Executives, BU Executives, Strategy Executives	Business Transformation Executives, BU Executives, Strategy Executives,	Business Executives & Information Strategy Executives	Business Executives & Solution Development Executives and Managers	Solution delivery Executives, Deployment Project Managers
Roles	CIO, Business information executives, EA effort sponsors etc	CIO, Executive of each BU for application solution delivery etc	CIO, Executive of each BU for IT operations	CIO, Business Information Owner, Business Data Steward etc	Business process & application owners, Enterprise Portfolio or Program Managers etc	Solution delivery owner & Delivery Managers, Hosting Solution Providers	Chief Architect, Information Architect, Business & System Analyst	Chief Architect, Lead Application Architect, Solution Architects, Development Leads etc	Infrastructure Architect, Network Architect, Deployment Architect

## Building Block Relationships – Detail View

The following set of matrices provided a detailed view of the high level view of the relationship matrix in the previous section.

### Planner’s (Scope) Perspective/Identification View

Business BB	Information	Application	Technology
<p><b>Business Units</b> - List of business units that is in scope of the enterprise architecture effort (by Geo, by product or by function) (ex HR Business unit)</p>	<p>List of information objects that support each of the business units in scope (by Geo, by product or by function)</p>	<p>List of enterprise applications that support the functional needs of the business units (ex. HR Internal systems, HR service providers external systems)</p>	<p>List of technological architecture elements namely., how users access information, user/technology interface, application development platform, communication elements (telephone, video, VoIP etc) and HW/SW technology platform that supports the applications and data storage platform. This should be developed for the entire enterprise encompassing all the business units in scope of the effort.</p>
<p>Locations</p>	<p>List of Information locations, develop a high level view of where the information is produced, consumed and archived (ex. Employee Information by Geo, Region or Country). This should also address the location of each class of users/Roles that need access to the information.</p>	<p>List of application locations impacted (World wide view by Geo, Region, Country, in house or outsourced etc). This should help develop the system boundaries, the overall scope in question and can be used for further analysis.</p>	<p>List of distribution of business locations and facilities and the mapping of locations to the business units (ex. Real estate, help desk, call centers, locations of outsourced service providers etc)</p>
<p><b>Capabilities</b> - List of Level 1 capabilities</p>	<p>List of information objects that support each of the business capabilities (for ex. for HR BU Employee, Payroll providers, Benefits, HR Service</p>	<p>List of applications that support the business capabilities</p>	<p>List of technology platforms IT, Internet, Intranet, Telephone, VoIP, Video, mail, Portals etc. This should be an elaboration of what is</p>

	providers). These objects should be classified as core, supportive, operational, transactional and historical information objects (for ex. enterprise wide master data objects).		described in cell (Tech/Capabilities).
Processes	List of information objects that support each of the business processes (elaboration of the capability/Information object cell above)	List of applications that automate the business process steps and the users that manually execute certain process steps	List of technology platforms per business process.
Stakeholders	Identify and list all the stakeholders from the strategic, operational and technical perspective.	CEO, Executive of each Business Unit who is responsible for the operations of the enterprise's application architecture	CEO, Executive of each Business Unit who is responsible for the operations of the enterprise technology architecture.
Roles	Identify and list the class of Roles namely Information executive, sponsor, producers, Consumer, Super User, Power user, executive user, Administrators etc	Identify and list the applications that need to be accessed by the Roles to retrieve the information identified in Roles/Information cell.	Identify and list all the user/technology interfaces that would support the defined Roles. What the end users need or utilize to access the information (Portal, mobile devices, intranet, Rich/Thin client etc)

**Owner's (Enterprise) perspective/Conceptual or Semantic View**

Business BB	Information	Application	Technology
Units	List of executives who have ownership of business information within the enterprise. This should include CIO reps who are responsible for setting the business data standards and Data stewards.	List of executives who have ownership of the applications and the business processes these applications support	List of executives who have ownership of the infrastructure aspects of the business. This should include executives from the outsourced application or data hosting solution providers.
Locations	Information logistics diagram that depicts the information flow from the point of creation, consumption and archival. The diagram should depict the information supply chain within the enterprise. This model is still at an abstract level. How does this supply chain support the business operations, management reporting, external reporting, support regulatory compliance etc.	Application topology that shows the geography deployment view of all the system components. This may also include the topology of User locations and depict from which business locations the users access the applications.	Business logistics diagram that shows how all the business locations are connected at the World wide level. List of all technology architecture components (business offices, Hosting centers, Telephone network, Video conferencing etc, Types of hosting environments (web, SAP, intranet, mail/messaging infrastructure, telephone switches etc)
<b>Capabilities -</b> Capability model that contains 3 levels of details	Information Worlds and their associated Information Types that support the capabilities	Application landscape that shows all the applications (for ex. HR Payroll systems, Benefits systems, Travel Management System, external service providers systems etc). This needs to be at a conceptual or semantic level without any connections between the application components. The landscape should	Technology landscape that shows the Infrastructure (SAP, PeopleSoft, Custom), Communication and Technology platforms (HP-UX, AIX, RISC server, SUN SPARC etc) that support the business capabilities

		depict the system boundaries of the EA effort undertaken.	
<b>Processes</b> – Process Story board or EPF Level 0 & 1	Information services that support the information exchange needs of process components	Enterprise services that support the functional needs of the process components	Same as above. But can be described either at a Capability level or by Process level. Certain processes might interact with external service providers, customers or suppliers. The conceptual technological landscape should be evaluated based on specific client engagement.
<b>Stakeholders</b> - Owners of each domain	Business Transformation Executives, Executive of BU, Business Strategy Executives	Business Transformation Executives, Executive of BU, Business Strategy Executives	Business Transformation Executives, Executive of BU, Business Strategy Executives
Roles	CIO, Business Information Owners, Business Data Steward	CIO, Business Process and Application Owners, Enterprise Portfolio or Program managers etc	Solution Delivery owner, Hosting solution providers

**Designer's (System) Perspective/Logical Definition View**

Business BB	Information	Application	Technology
Units	Define Information management strategy for the enterprise and the design point of each BU	Application architecture strategy and specific functional design points of each BU	Enterprise technology strategy and design point of each BU
Locations	Define source, transactional and historical applications for the information objects that are in scope of the EA effort. In other words, clearly depict the System of origin, System of Record and System of reference for each Information object	Define the development centers, application development centers and location of key resources for the development of applications that are in scope for the EA effort	Define the hosting locations, sandbox, testing, staging and production environments, Data centers and end user access points
Capabilities	Definition of business specification of each Information Type that belong to each Information World (for ex. Employee record is made up of contact, address, Education, Equal Employment etc related information)	Application architecture that depicts the applications, modules, their interfaces and how they interact to fulfill a specific business capability. This should also clearly identify the System of Origin, System of Record and System of Reference for key Information objects that support the capabilities	Detailed definition of network and application topology as deployed with description of SW components, their versions, HW components, Communication protocols, interface types (service call, API etc)
Processes	Detailed specification of the Information Services that support the information flow and exchange needs of individual process components. Define the logical meta model of the Information Type. This should also be accompanied by	Application architecture similar to above but at a process level and the level of detail varies from one client engagement to another.	Same as above and the level of detail should be determined on a specific client engagement

	detailed Information exchange matrix.		
<b>Stakeholders -</b> Responsible for the solution design & delivery	Executives responsible for business transformation, business information and solution development and delivery program managers	Executives responsible for business transformation, business information and solution development and delivery program managers	Solution delivery Executives, Deployment Project Managers etc.
Roles	Chief Architect, Information Architect, Business & system analyst	Chief Architect, Application architect, Solution architect, Development Leads, etc	Chief Architect, Enterprise Architects, Infrastructure analysts, Deployment Architects, Hosting center managers, Project delivery managers, Technical Domain Architects

## ARIS Modeling

The ARIS modeling tool provides a two dimensional view of the relationship between any two building blocks within and across EA domains. A determination needs to be made to evaluate if the building block relationship depicted in this article can be modeled using the current version of ARIS in its totality.

## Model Elaboration (Examples)

### Example 1

In the first example, the following table describes the intersection of Business unit and Information domain cell from the planner/scope perspective.

Business Unit/Information Object	Master Info Objects	Transactional Info Objects	Historical Info Objects
Human Resources	<ul style="list-style-type: none"> <li>• Employee Master</li> <li>• Time Entry</li> <li>• Benefits Service Provider Master</li> </ul>	<ul style="list-style-type: none"> <li>• Self-service transactions</li> <li>• Payroll transactions</li> </ul>	<ul style="list-style-type: none"> <li>• Payroll/Salary history</li> <li>• Employment history</li> <li>• Vacation history</li> </ul>
Procurement	<ul style="list-style-type: none"> <li>• Material Master</li> <li>• Vendor Master</li> </ul>	<ul style="list-style-type: none"> <li>• Purchase &amp; Sales Order processing</li> </ul>	<ul style="list-style-type: none"> <li>• Order history</li> </ul>

Product Development	<ul style="list-style-type: none"> <li>• Product/Material Master</li> <li>• Bill of Material</li> <li>• Product Cost</li> </ul>	<ul style="list-style-type: none"> <li>• Collaborative product development</li> </ul>	<ul style="list-style-type: none"> <li>• Product history</li> <li>• Life cycle management</li> </ul>
Supply Chain Management	<ul style="list-style-type: none"> <li>• Material Master</li> <li>• Vendor Master</li> <li>• Demand forecast</li> </ul>	<ul style="list-style-type: none"> <li>• Order logistics</li> <li>• Demand Forecast</li> <li>• Order scheduling</li> </ul>	<ul style="list-style-type: none"> <li>• Order history</li> <li>• Warranty entitlement</li> </ul>

**Example 2**

As a second example, we will take a methodical step-by-step approach needed to properly identify information capabilities from the planner/scope perspective.

The information capabilities can be qualified by a business' ability to locate, authenticate, synthesize and interpret information. Whether associated with logistics, knowledge management, compliance or security, information capabilities have become the 'knowledge edge' of today's business. The process described hereafter has been written to provide the EA with a simplified way to classify the 'outside-in' view of the businesses' information capabilities.

The preferred method of achieving the required holistic view of information capabilities can be achieved in a three step process:

Step 1 - Identify and classify the Information Types (IT)

Step 2 - Identity and classify the Information Worlds (IW)

Step 3 - Create Information Type to Information World logical view

The few templates proposed within this section should be helpful to classify the businesses' information capability attributes, and in the process create criteria with which these information objects can be measured, classified and categorized. Alternatively, the template may serve to identify where duplicate objects exist.

In addition to the above, a logical view of the capability to Information World may be represented using a modeling tool to further provide a holistic view of groups of capabilities available to the planner. However, this step in addition to the above, finds itself outside the scope of this document.

## Step 1

### Identify the Information Types (IT)

The first step in the process is to identify the information objects and group them as Information Types. Obtaining this basic grouping is an easy process which can be first achieved by differentiating whether the object is event initiated or process initiated. In addition, non-functional attributes such as accessibility, availability and modularity can also be used to understand the object's context. The following is a list of object attributes that can further help in classifying Information objects to Information Types.

Owner	Cost estimation	Used technologies
Consumer	Exception notification	Related compliance
Level	Performance	Stability
Lifecycle	People involved	Availability
Trigger event	Used processed	Complexity
Exception handling	Quality	Focus
Granularity	System	Modularity
Enabler	Description	boundaries
Interfaces	Scope	

Having identified Information Types, they should be classified according to the following template.

#### Template 1: Information Type Profile

Information Type Profile	
No.	IO##.##
Name	A useful short name that can help to quickly describe the Information object
Context	Brief context information describing the information object.
IT Classification	<input type="checkbox"/> Event initiated <input type="checkbox"/> Process initiated
Non-functional attributes	Attributes (chosen from above)

## Step 2

### Identify the Information World (IW)

The second step will be to identify the Information Worlds to which the above Information Types belong.

The purpose of this is to understand who owns, creates and modifies the information Worlds in order to ultimately promote content that can be reused and single-sourced in a variety of ways in support of capabilities. The classification by Information World must achieve the following:

Factor out supporting reference information from other objects

Eliminate unimportant or redundant information

Identify common or reusable objects

Although now grouped within Information Worlds, we wish to retain a certain descriptive granularity of each Information World. As in Template 1 above, Information Worlds should be classified according to their purpose and function as shown in Template 2 below.

### Template 2: Information World Profile

Information World Profile	
No.	IW##.##
Name	A useful short name that can help to quickly describe the Information world
Context	Brief context information describing the information world.
Preliminary Classification	<input type="checkbox"/> Core <input type="checkbox"/> Supportive <input type="checkbox"/> Operational <input type="checkbox"/> Transactional <input type="checkbox"/> Historical <p>Core – Information Objects that are strategic to the enterprise</p> <p>Supportive – Information Objects decomposed from Core IO</p> <p>Operational – Information Object that supports the execution of the business capability.</p> <p>Transactional – Information Object used within a transaction processing system.</p> <p>Historical – Information Object to be archived and analyzed.</p>

### Step 3

#### Create Information Type to Information World logical views

This third step involves the mapping of Information Types to Information World. As represented in the table below, Material related data is represented by a number of Information types. Each of these Types will later be found to support one or many business capability.

The below example reflects Information Types identified to support a product fulfillment business capability where the initial product metadata is used throughout the process, from receiving, put-away, pick & pack, packaging, shipping and other logistical execution processes.

Table 1. Example of Information World to Information Type.

Information World: Material	Information Type: metadata
	Information Type: Supplier
	Information Type: Warehouse location
	Information Type: Order

### Step 4 (Alternate)

#### Create a mapping of business capability to Information World

As a follow-on step of representing the information objects as IT and then IW, the mapping of IW to capabilities is helpful in providing the Planner with a useful and holistic view of the information assignments found within the enterprise.

Ultimately, the level of detailed and completeness of information grouping defined in steps 1, 2 and 3 will be reflected in the Planner's ability to extract useful conclusions as to information service level expectations, impediments and constraints and information organizational ownership.

Table 2. Example of Business Capability to Information Worlds.

Capability: Order fulfillment	Information World: Supplier
	Information World: Material
	Information World: Product
	Information World: Customer

## Related Content

SAP EA Framework Training Material

Federal Enterprise Architecture Framework -

[https://secure.cio.noaa.gov/hpcc/docita/files/federal\\_enterprise\\_arch\\_framework.pdf](https://secure.cio.noaa.gov/hpcc/docita/files/federal_enterprise_arch_framework.pdf)

Zachman Framework, <http://www.zifa.com/>

TOGAF 8.1, <http://www.opengroup.org/architecture/>

## Copyright

© Copyright 2006 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, Informix, i5/OS, POWER, POWER5, OpenPower and PowerPC are trademarks or registered trademarks of IBM Corporation.

Adobe, the Adobe logo, Acrobat, PostScript, and Reader are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.

Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

These materials are provided "as is" without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall not be liable for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials.

SAP does not warrant the accuracy or completeness of the information, text, graphics, links or other items contained within these materials. SAP has no control over the information that you may access through the

use of hot links contained in these materials and does not endorse your use of third party web pages nor provide any warranty whatsoever relating to third party web pages.

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.