

EA Delivers Demonstrable Value

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Mohamed Ganie
Manager: Enterprise Architecture and ICT Infrastructure
Armcor

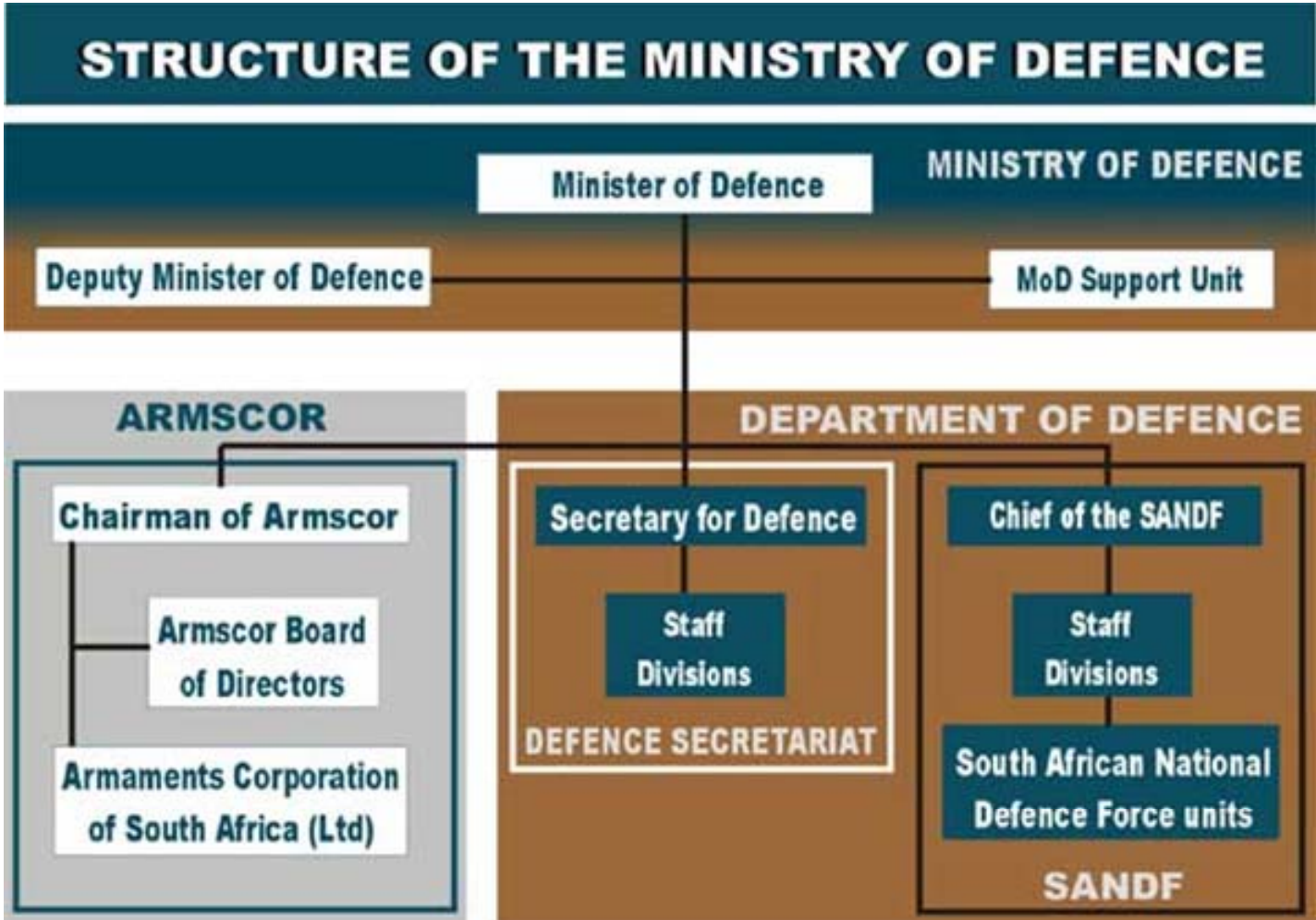
Presentation Outline

- **Background**
- **Rationale for Enterprise Architecture**
- **EA Approach**
- **EA Capability**
- **User Requirement Specification**
- **Conclusion**

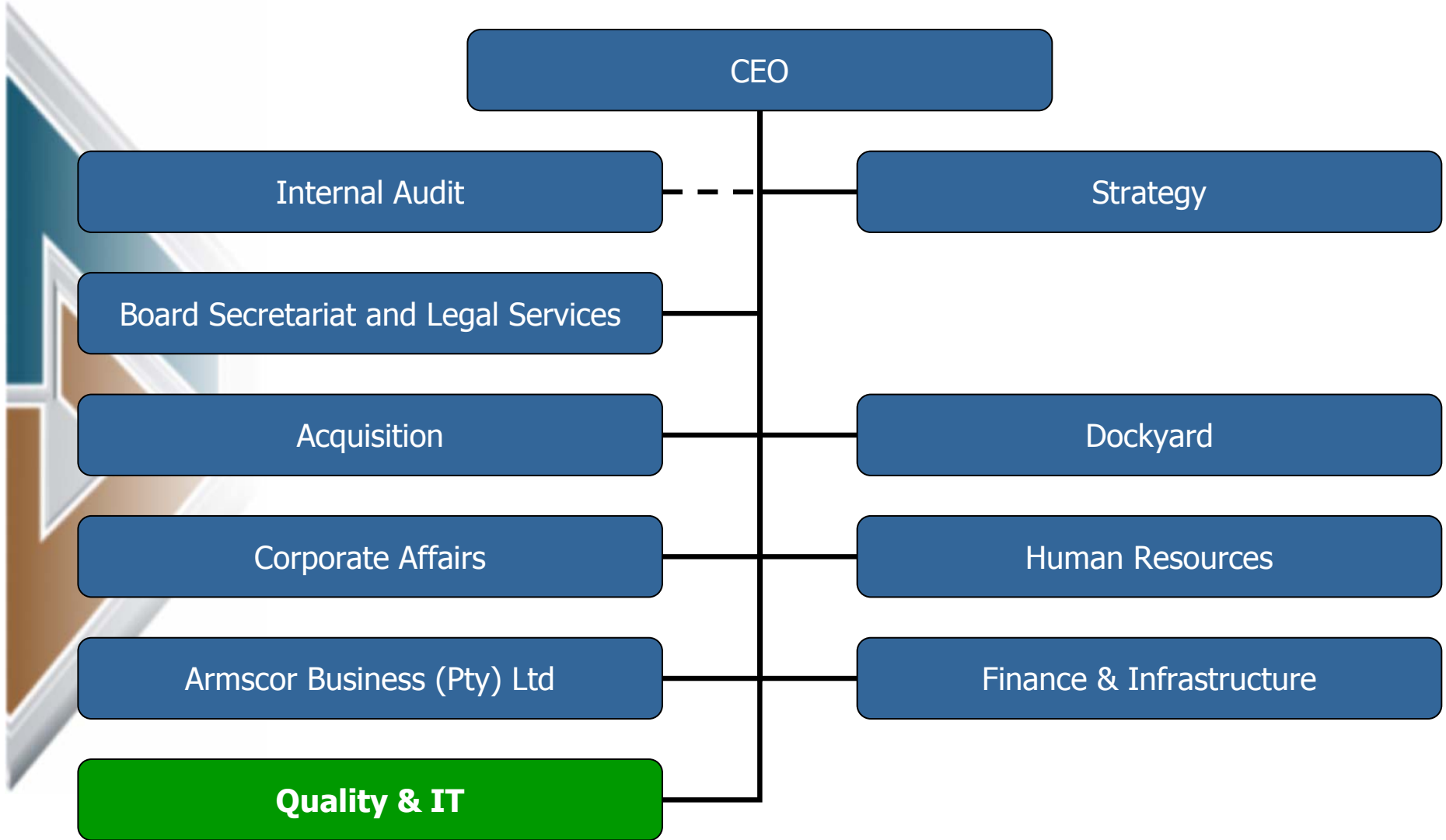


ARMSCOR's mission is to meet the acquisition, maintenance and disposal needs of the Department of Defence and other clients in terms of defence matériel, related products and related services. ARMSCOR is to maintain strategic capabilities and technologies and promote the local defence-related industry.

External Organisation Structure

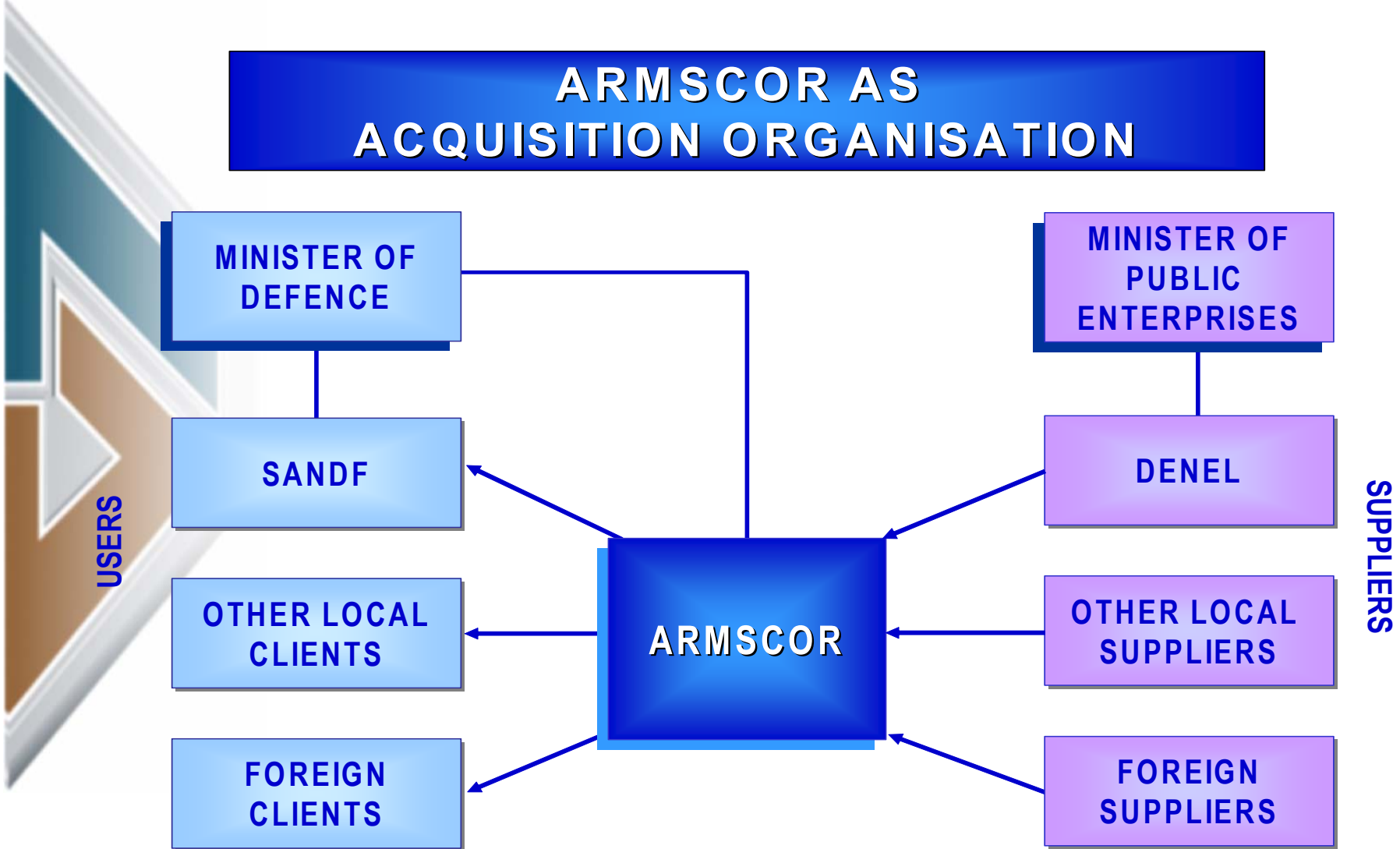


Internal Organisational Structure



Acquisition

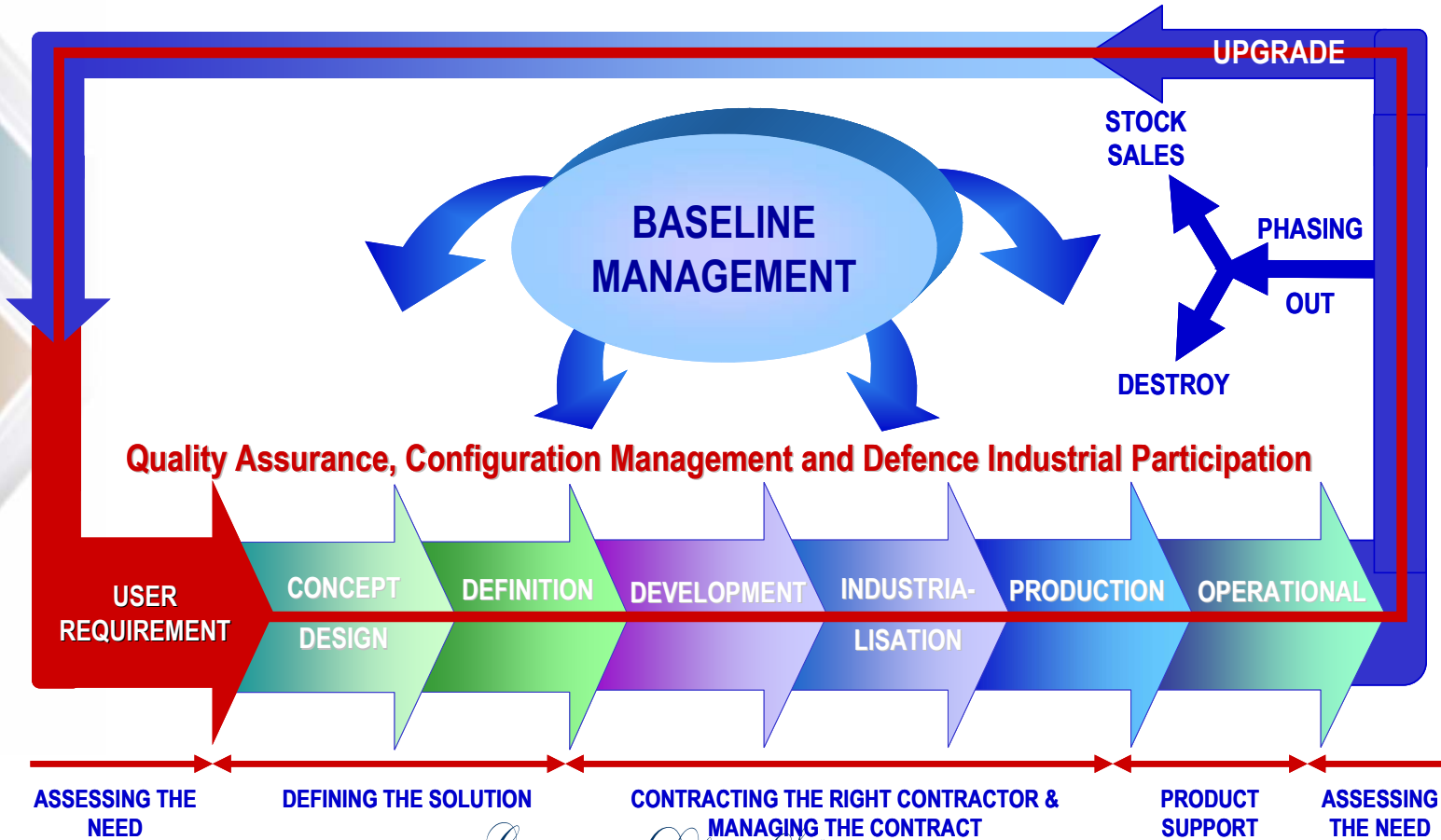
ARMSCOR AS ACQUISITION ORGANISATION



• Gateway to Defence Solutions •

Product Life Cycle

ACQUISITION MANAGEMENT THROUGH THE LIFE CYCLE OF THE PRODUCT



Gateway to Defence Solutions

Financials – 5 Year Overview

	2006 Rm	2005 Rm	2004 Rm	2003 Rm	2002 Rm
Assets	412.6	397.8	401.9	381.3	350.3
Revenue	1 092.9	1 086.0	1 101.5	923.3	648.1
Net surplus/deficit for year	14.8	(4.1)	9.8	31.0	13.4
Acquisition activities	8 405.9	7 386.8	8 338.4	7 868.7	7 006.5

Example Products and Services



Vehicle testing at Gerotek



Artillery testing at Alkantpan



Verification of system interoperability



The underwater vehicle demonstrator



Sale of Impala Aircraft by DMD

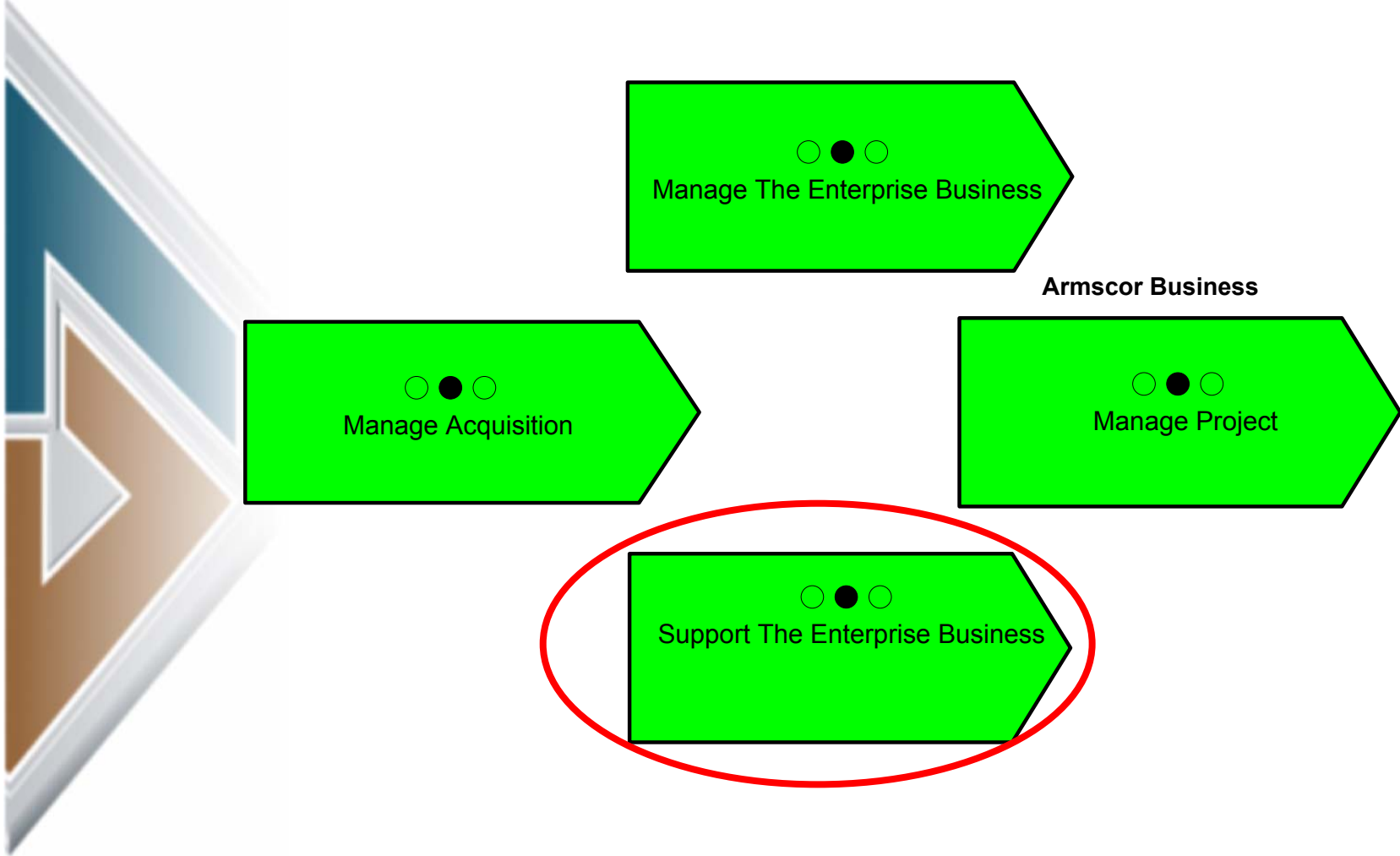


Freight forwarding by AB Logistics

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Business Driver: High Support Costs



Business Driver: High IT Costs

	2006	2005	2004	2003
Total IT Budget	R 53,000,000	R 60,952,249	R 52,437,512	R 38,430,000
No of Employees	980	980	980	970
No of Users	1,200	1,200	1,200	1,200
Total IT Workforce	51	51	51	60
No of computers	1,700	1,700	1,400	1,200
No of servers	114	114	96	90
Avg IT Budget per Employee	R 54,082	R 62,196	R 53,508	R 32,025
Avg IT Budget per User	R 44,167	R 50,794	R 43,698	R 32,025

Business Driver: Application Proliferation

Acquisition	16
Corporate Affairs	19
Human Resources	17
Quality	5
Information and Infrastructure	17
Finance	18
Legal Services	1
Armcor Business	9
TOTAL	102

Business Driver: IT Decision Making

- **High security environment**
- **Critical IT decisions not taken at the right level of authority resulting in “the tail wags the dog” scenario**
- **IT decisions not taken based on accurate information resulting in poor choices**
- **Tendency by IT to over provision**
- **“Not invented here” syndrome**
- **Everyone is an IT expert**

Technology Drivers

Three key technologies with disruptive influence on our current architecture

- **Open Source Software**

- Operating System : Linux
- Office Suite : Open Office & Star Office
- Backend Systems : ERP applications

- **Broadband Wireless Access**

- WiFi
- WiMax

- **Voice Over IP**







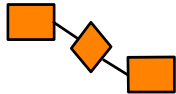
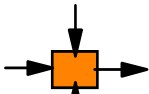
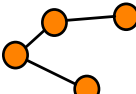
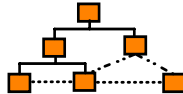
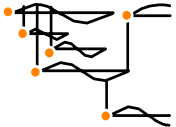
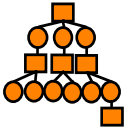
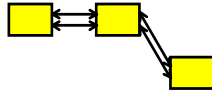
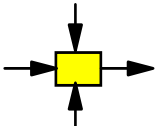
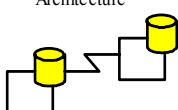
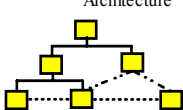
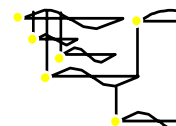
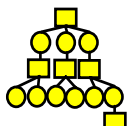
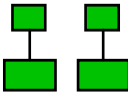
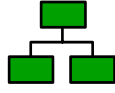
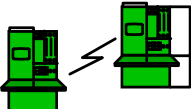
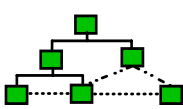
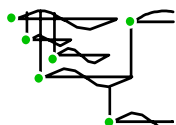
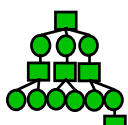






Management Buy-in

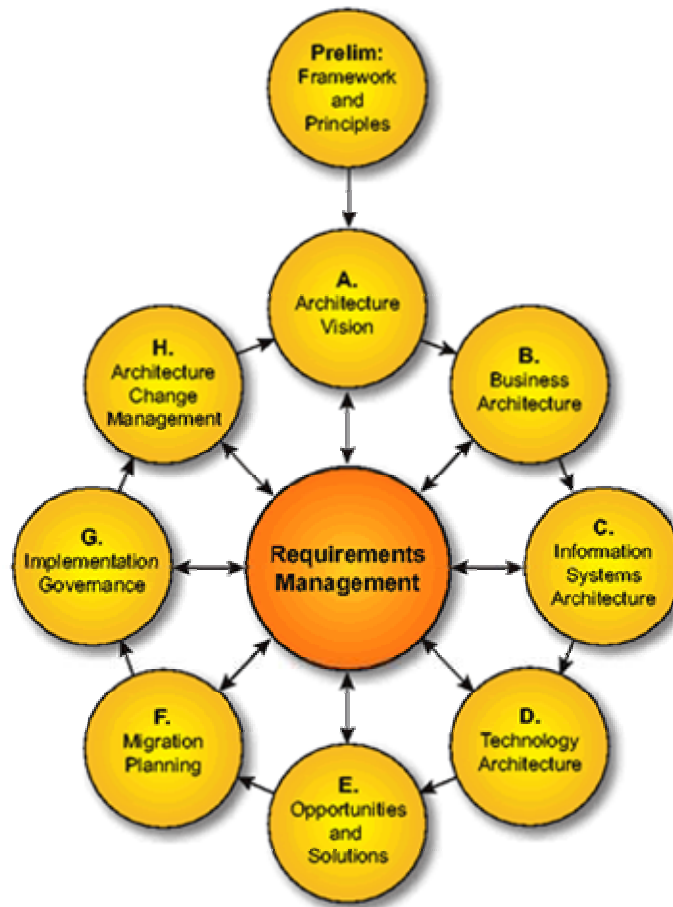
- **The need for EA was identified in 2003 but no buy-in from top management – no funds**
- **Budget was approved for the 2005 financial year**
- **Strategic Session of the Management Board took a decision in July 2005 to delay the mainframe migration project and stop all major IT projects**
 - EA Project is the only show in town.
 - Mainframe migration project – stopped

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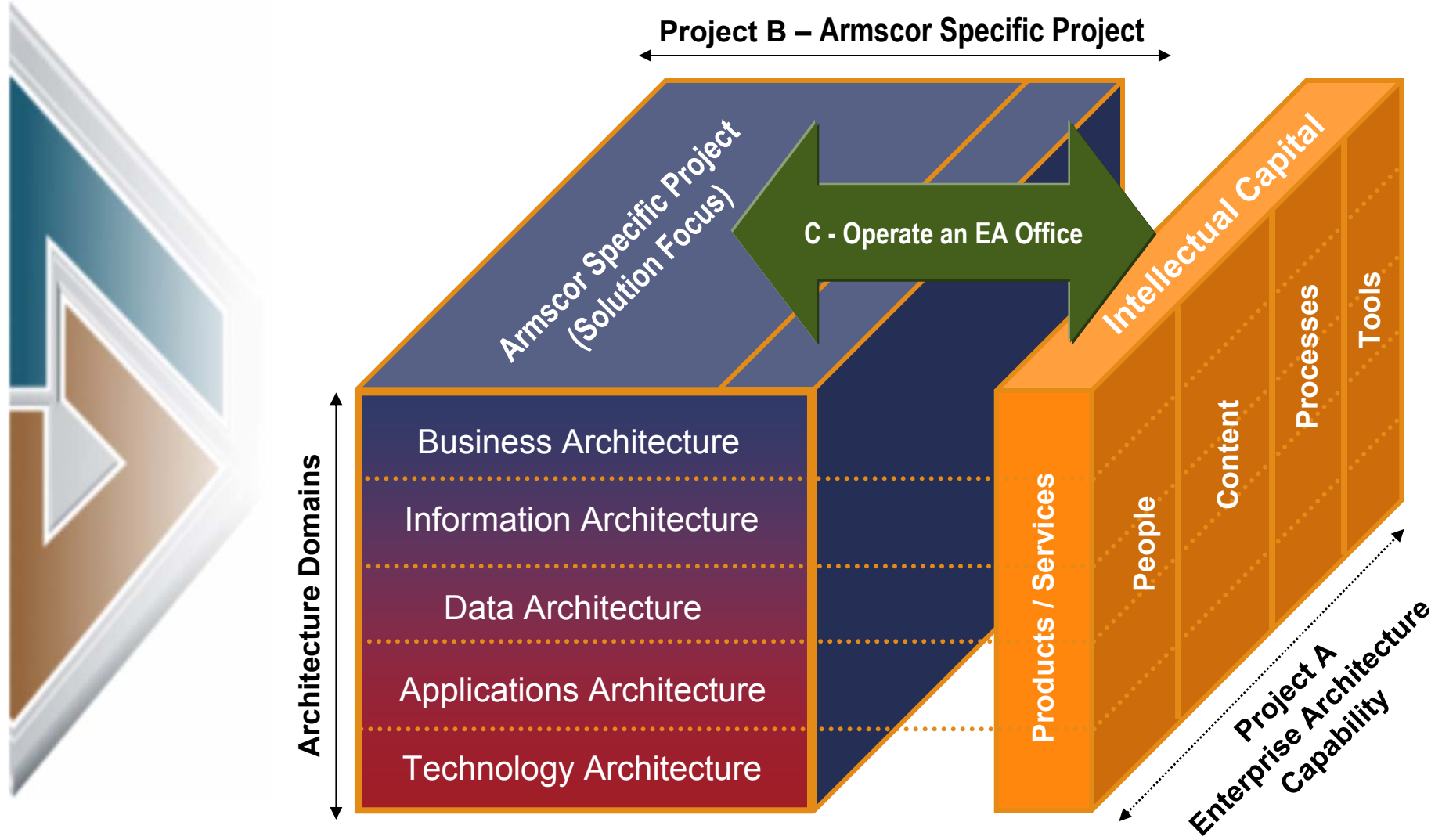
ENTERPRISE ARCHITECTURE - A FRAMEWORK TM

	DATA <i>What</i>	FUNCTION <i>How</i>	NETWORK <i>Where</i>	PEOPLE <i>Who</i>	TIME <i>When</i>	MOTIVATION <i>Why</i>	
SCOPE (CONTEXTUAL)	List of Things Important to the Business 	List of Processes the Business Performs 	List of Locations in which the Business Operates 	List of Organizations Important to the Business 	List of Events Significant to the Business 	List of Business Goals/Strat 	SCOPE (CONTEXTUAL)
<i>Planner</i>	ENTITY = Class of Business Thing	Function = Class of Business Process	Node = Major Business Location	People = Major Organizations	Time = Major Business Event	Ends/Means=Major Bus. Goal/ Critical Success Factor	<i>Planner</i>
ENTERPRISE MODEL (CONCEPTUAL)	e.g. Semantic Model 	e.g. Business Process Model 	e.g. Logistics Network 	e.g. Work Flow Model 	e.g. Master Schedule 	e.g. Business Plan 	ENTERPRISE MODEL (CONCEPTUAL)
<i>Owner</i>	Ent = Business Entity ReIn = Business Relationship	Proc. = Business Process I/O = Business Resources	Node = Business Location Link = Business Linkage	People = Organization Unit Work = Work Product	Time = Business Event Cycle = Business Cycle	End = Business Objective Means = Business Strategy	<i>Owner</i>
SYSTEM MODEL (LOGICAL)	e.g. Logical Data Model 	e.g. "Application Architecture" 	e.g. "Distributed System Architecture" 	e.g. Human Interface Architecture 	e.g. Processing Structure 	e.g., Business Rule Model 	SYSTEM MODEL (LOGICAL)
<i>Designer</i>	Ent = Data Entity ReIn = Data Relationship	Proc. = Application Function I/O = User Views	Node = I/S Function (Processor Storage etc) Link = Line Characteristics	People = Role Work = Deliverable	Time = System Event Cycle = Processing Cycle	End = Structural Assertion Means = Action Assertion	<i>Designer</i>
TECHNOLOGY MODEL (PHYSICAL)	e.g. Physical Data Model 	e.g. "System Design" 	e.g. "System Architecture" 	e.g. Presentation Architecture 	e.g. Control Structure 	e.g. Rule Design 	TECHNOLOGY CONSTRAINED MODEL (PHYSICAL)
<i>Builder</i>	Ent = Segment/Table/etc. ReIn = Pointer/Key/etc.	Proc. = Computer Function I/O = Screen/Device Formats	Node = Hardware/System Software Link = Line Specifications	People = User Work = Screen Format	Time = Execute Cycle = Component Cycle	End = Condition Means = Action	<i>Builder</i>
DETAILED REPRESENTATIONS (OUT-OF-CONTEXT)	e.g. Data Definition 	e.g. "Program" 	e.g. "Network Architecture" 	e.g. Security Architecture 	e.g. Timing Definition 	e.g. Rule Specification 	DETAILED REPRESENTATIONS (OUT-OF-CONTEXT)
<i>Sub-Contractor</i>	Ent = Field ReIn = Address	Proc. = Language Stmt I/O = Control Block	Node = Addresses Link = Protocols	People = Identity Work = Job	Time = Interrupt Cycle = Machine Cycle	End = Sub-condition Means = Step	<i>Sub-Contractor</i>
FUNCTIONING ENTERPRISE	e.g. DATA	e.g. FUNCTION	e.g. NETWORK	e.g. ORGANIZATION	e.g. SCHEDULE	e.g. STRATEGY	FUNCTIONING ENTERPRISE



+ Resource Base

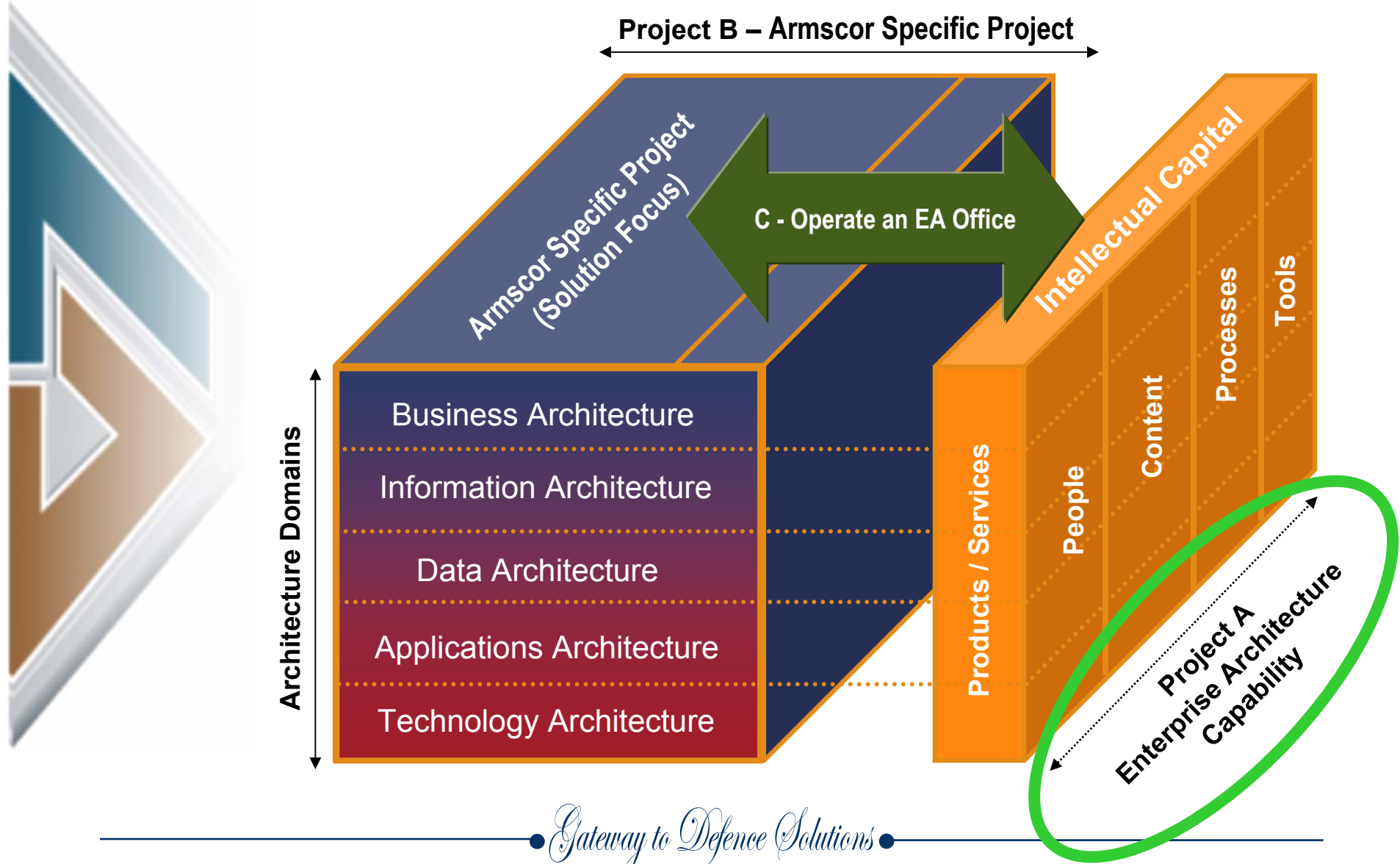
EA Approach



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EA Approach



Gateway to Defence Solutions

Establishing EA Capability

- **Defined EA Principles**
- **Developed EA Conceptual Framework**
- **Selected EA Toolset**
- **Defined EA Meta-model**
- **Executed Pilot Project**

General	Business	Information	Data	Application	Technology
<p>Principle Architecture and standards are based on business strategies, processes, and requirements.</p> <p>Rationale Ensure value by being enterprise and project architectures to strategic business objectives, processes and information needs. Clearly aligning IT projects to strategic business objectives, ensures that candidate projects that are most useful are identified. Automation projects must support new and existing business objectives, not merely introduce new technology.</p> <p>Implications 1. Strategic business objectives are incorporated into business and solutions architecture. 2. Architecture principles support all of the enterprise including customers, business partners, suppliers and sub-tier sites. 3. The architectures must be adequately flexible to support changing strategies and future business events (new markets, divestitures, acquisitions, etc). 4. Information Systems (IS) projects that fit to strategic business objectives, processes and information needs will likely see funding. 5. Using existing systems infrastructure when feasible. If the existing systems infrastructure does not match requirements then justify a change to the architecture.</p>	<p>Principle The Business Architecture will accommodate diverse business models that will reflect the character of the total Armcor group.</p> <p>Rationale Expressing within Armcor Business is impractical to attempt to develop a generic business model to reflect the business processes across each business unit. The group defines a number of diverse businesses together and should be reflected like that in the Business Architecture.</p> <p>Implications 1. Armcor will have one business model. 2. Armcor Business will have a business model per business unit. 3. Shared services such as Finance and Human Resources can be modeled across the group.</p>	<p>Principle Each Information and knowledge asset has a clearly defined business owner.</p> <p>Rationale Clearly defined ownership means accountability to manage the information and knowledge asset.</p> <p>Implications 1. An Owner for each information asset and knowledge can be identified. 2. Someone must assign owners. 3. An owner can be a person or a group of people. 4. Owners have responsibility and authority to manage information assets and are accountable to the company for quality, value, protection, and adherence to business requirements throughout the information life cycle. 5. Each owner establishes policy and performance measures to ensure cost effective information availability. 6. Each owner is the ultimate point of resolving conflict related to definition and use. The owner has the authority to accept/reject change requests.</p>	<p>Principle Each user of the data must steward the data consistent with the information owner's guidelines.</p> <p>Rationale Clearly defined stewardship means accountability to manage the data asset within the steward's domain.</p> <p>Implications 1. Data stewards have responsibility and authority to manage data assets and are accountable to the information owner for data quality, value, protection, and adherence to business requirements within the steward's domain. 2. Each data steward establishes policy and performance measures related to quality, management and use. 3. Data stewards coordinate with the information asset owner to resolve conflict related to definition and use. 4. A data steward can be a person or a group of people.</p>	<p>Principle Each application has a clearly defined owner.</p> <p>Rationale Clearly defined ownership means accountability to the business process owner(s). This results in the ability to manage the application and keep it operating at an acceptable level of performance.</p> <p>Implications 1. An Owner for each application can be identified. 2. Someone must assign owners. 3. The owner is responsible for a process to review and approve changes to the application. 4. The owner is responsible for ensuring alignment with Information Technology standards and adherence to business requirements (continuity, access control, etc.). 5. The owner is responsible to work with all process owners to ensure appropriate functionality is delivered in a timely and cost effective manner. 6. Application owners plan for and manage application development and maintenance costs through all phases of the application life cycle. 7. Owners are responsible to sign and meet Service Level Agreement requirements. 8. Metrics are used to measure application performance and drive improvements.</p>	<p>Principle Each component of the computing infrastructure has a clearly defined owner.</p> <p>Rationale Clearly defined ownership means accountability. This results in the ability to manage the component and keep it operating at an acceptable level of performance.</p> <p>Implications 1. An Owner for each component can be identified. 2. Someone must assign owners. 3. The owner is responsible for a process to review and approve changes to the component. 4. The owner is responsible for ensuring alignment with Information Technology standards and adherence to business requirements (continuity, access control, etc.). 5. The owner is responsible to work with all process owners to ensure appropriate functionality is delivered in a timely and cost effective manner. 6. Component owners plan for and manage development/acquisition and maintenance costs through all phases of the technology life cycle.</p>
<p>Principle All aspects of the architecture are optimized to provide the greatest benefit to the enterprise as a whole.</p> <p>Rationale Investments in IT are the investments elsewhere in the enterprise – they must be optimized for total return on investment.</p> <p>Implications 1. The enterprise architecture is documented and managed. 2. Architects develop a strategic plan and use it as a basis for evaluating architecture. 3. Architects identify which component architectures take precedence over others. 4. Optimization drives end-to-end enterprise-wide. 5. Optimization, for example, just for application delivery, or operations, or support, is not acceptable. 6. Products are managed with a holistic, enterprise view. 7. Strategic Applications, Information & Data Object Interfaces and Common Business Objects support multiple business domains, and will need to be governed by teamwork among those domains.</p>	<p>Principle Each business process has a clearly defined owner.</p> <p>Rationale Clearly defined ownership means accountability. This results in the ability to manage the process, which result in quality performance of the process. Single point of authority to define and refine a process provides consistent direction.</p> <p>Implications 1. An Owner for each business process can be identified. 2. Someone must assign owners. 3. Each process owner is accountable for the performance of the process and the quality of the products and services provide by the process. Relevant metrics are required and measurement data must be collected on an ongoing basis. 4. Process Owners approve scope or deviations based on valid business cases. 5. A comprehensive business process architecture encompassing process models, events, transactions, and state transitions is required. 6. Service level agreements with customers and suppliers are established and maintained.</p>	<p>Principle The flow of information through value streams drives our information, data and application architectures.</p> <p>Rationale Viewing the complete flow of information from the creator to all users across the many process domains and analyzing how the information provides value to the list of users will enable process and information streamlining, information integration and sharing with all the parties that need the information is more important than improved domain specific functionality.</p> <p>Implications 1. Projects are viewed for enterprise wide benefits rather than just local. Project proposals will likely contain both local and enterprise level benefits. 2. Information models need to be constructed, maintained and shared. 3. The information model (input or output) provides the base for effectively understanding the appropriate scope of data and mapping between applications. 4. Funding is needed at an enterprise level for look that are cross-functional.</p>	<p>Principle Each data element has a complete, correct, and consistent business definition and technical (data type, format, etc.) description that are under configuration management and is readily available to any authorized person.</p> <p>Rationale A data definition is required for anyone to properly use the data element.</p> <p>Implications 1. Meta Data standards, tools, and usage are defined at an enterprise level. 2. Metadata will be defined once and used for all applications in the enterprise. 3. An enterprise data dictionary will be created and maintained. 4. When new data elements are identified, they must be defined and integrated into the enterprise data models. 5. Project methods and their corresponding data definitions must be based on the enterprise data models.</p>	<p>Principle Development of applications used across Armcor and Armcor Business is preferred over the development of similar or duplicate applications which are only provided to a particular business unit.</p> <p>Rationale Duplication of applications is costly and impacts on data management and integrity.</p> <p>Implications 1. Business units which depend on a capability which does not serve the entire group must change over to the approved group-wide capability. This will require establishment of and adherence to a policy requiring this. 2. Business units will not be able to develop capabilities for their own use which are similar/duplicate of group-wide capabilities. In this way, expenditures of scarce resources to develop essentially the same capability in multiple different ways will be reduced. 3. Data and information used to support group decision making will be standardized to a much greater extent than previously.</p>	<p>Principle The computing infrastructure will be simple. Simple means reduced complexity, elimination of non-value added components & protocols and not over designed.</p> <p>Rationale • Easy to use • Easy to install • Easy to maintain Contributes to the simplicity of the entire system.</p> <p>Implications 1. Perform usability testing. 2. Operations is assessment. 3. Reduce - reduces training needs 4. Design consistent with Service Level Agreements (SLA) 5. Optimum number of configurations to maintain</p>
<p>Principle Architecture decisions are based on approved process, technical, and product standards.</p> <p>Rationale Standards based architectures enable reduced complexity, reusability, ease of use, consistency, interoperability, integration, communication, flexibility, evolutionary change and economies of scale (e.g., quantity discounts & like licenses).</p> <p>Implications 1. Enterprise wide standards are maintained at the enterprise level. 2. Standards from broadly based standards committees will first be considered, if they exist, before considering standards from committees dominated by small collections of services. Standards will only be developed internally when government, industry and existing company standards do not meet the business need. Proprietary extensions to technical standards should not be used. 3. Archi-structure standards and practices are based on an analysis of quality, life cycle cost, delivery and support. 4. Standards enable economies of scale (e.g., quantity discounts & like licenses) and reduced complexity (fewer products, solutions, tools, designs, applications and methods). 5. Use of standard methods for system engineering will result in improved quality, cost and delivery.</p>	<p>Principle Decisionmaking is performed at the lowest level possible within the organization.</p> <p>Rationale This provides highest business value because 1) people that intimately know the business are involved, and, 2) decisions are made quicker.</p> <p>Implications 1. Owners must delegate authority and responsibility. 2. Employees must be supported with information, authority, accountability and education.</p>	<p>Principle Information must be readily available and easily accessible to people authorized to have it.</p> <p>Rationale The enterprise relies on the timely availability of information. Changes in one area of the business can affect other areas. Business knowledge skills are spread evenly throughout the enterprise. Therefore, information needs to be made immediately available throughout the global enterprise.</p> <p>Implications 1. Design will be based on availability of information. 2. The physical catalog, methodologies, and support infrastructures of information must be transparent to the people requesting it.</p>	<p>Principle Each data element has a clearly identified single authoritative source.</p> <p>Rationale Having a well-defined system of record for each data element is critical to achieving data quality. It reduces production, maintenance, and cost. It enables effective integration/sharing purposes.</p> <p>Implications 1. Procedural discipline is required to consistently establish the practice. 2. All use of each data element instance must derive from the system of record.</p>	<p>Principle Industry accepted guidelines will be used in the design of applications.</p> <p>Rationale Well-designed applications are easier to use and easier (and cheaper) to develop and maintain resulting in greater efficiency and a longer useful application life cycle.</p> <p>Implications 1. Design for ease of use and performance. 2. Appropriate legal boundaries must be established between applications. 3. Engineer applications to be tightly cohesive and loosely coupled. 4. Application delivery should be evolving toward an object-oriented approach. 5. Applications should be moving to component based architectures. 6. Relevered applications should be designed for use on multiple platforms and shared services. 7. Applications should be designed to accommodate reduced bandwidth, unreliable networks, and network latency. 8. Engineer application systems for maintainability, security and manageability, including failure, recovery, and continuity.</p>	<p>Rationale • Increasing emphasis on collaboration among customers, partners, suppliers and employees spanning the globe. • Requirements to integrate securely across diverse heterogeneous systems owned or operated by external entities. • Need for a consistent security model in an environment where content is managed among multiple systems</p> <p>Implications 1. Zoning and Compartmentalization 2. Barriers free collaboration with partners 3. Encryption and security perimeter transformation 4. Security infrastructure based on open standards</p>
<p>Principle Armcor employs an architecture life cycle that:</p> <ul style="list-style-type: none"> • balances velocity and stability in introducing new architecture, products and services • evolves portfolio of products & services per strategic architecture plans • retires obsolete assets as part of tactical plans. <p>Rationale • New architecture components should be introduced at the right time, in right situation as part of a structured planning process. • Obsolete architecture components should be retired to reduce variations as part of implementation plans.</p> <p>Implications 1. Understand customer requirements. 2. Understand industry trends. 3. Develop strategic and tactical plans and manage changes consistent with plans. 4. Track metrics. 5. Insert new architecture components at the appropriate time.</p>	<p>Principle Standard methods are used to develop and maintain products and services.</p> <p>Rationale Consistent disciplines result in higher quality products and services, reduced development and rework, and effective product life cycles.</p> <p>Implications 1. Use common standard methods to analyze, design and monitor the evolution of organization architecture. 2. Use common standard methods to deliver and maintain information systems. 3. Use the Software Engineering Institute's Capability Maturity Model to assess the effectiveness of process and systems delivery capabilities. 4. Everyone engaged in systems development and support requires education to effectively use common standard methods & tools.</p>	<p>Principle Relevant external information must be managed across its value stream.</p> <p>Rationale Information derived or obtained from an external source has value.</p> <p>Implications 1. Links to the external sources and targets must be maintained as information movement occurs. 2. Its integration must be accomplished across the information value chain, including customers, suppliers, and trading partners. 3. An internal owner for each external information asset can be identified. 4. External information will be analyzed for its value and usable to the enterprise.</p>	<p>Principle Data will not be unnecessarily duplicated.</p> <p>Rationale Needless duplication of data increases cost and complexity.</p> <p>Implications 1. The case for data copies must be carefully considered and incremental cost and complexity must be justified. Economics, access performance demands, or special local analysis needs are required to justify data copies. 2. All data will be copied or derived from the system of record and retrieved should be timely and reliable. 3. Updates are made only in the system of record.</p>	<p>Principle The computing infrastructure will be affordable, yet of acceptable quality. This means:</p> <ul style="list-style-type: none"> • capable of growing and shrinking with business revenues • benchmarks among top quartile with industry peer groups • consideration for overall lifecycle (acquisition, development, operation and support) costs • cost avoidance through leveraging current assets • higher productivity. <p>Rationale • Information Technology (IT) spending should correlate with business margins. • Continued viability of external IT service offerings. • Maximization of asset utilization while keeping the life cycle costs in perspective.</p> <p>Implications 1. Understand real costs. 2. Avoid high fixed cost solutions. 3. Collect better metrics. 4. Encourage competition to reduce costs, multi-vendor solutions. 5. Move towards commodity based products and services. 6. Fosterize linear growth by avoiding large incremental costs. 7. Minimize upgrade frequency and costs. 8. Manage customer appetite.</p>	<p>Principle The enterprise employs a technology life cycle discipline that:</p> <ul style="list-style-type: none"> • balances velocity and stability in introducing new technology, products and services • evolves portfolio of products & services per strategic architecture plans • retires obsolete assets as part of tactical plans. <p>Rationale • New technology components should be introduced at the right time, in right situation as part of a structured planning process. • Obsolete technology components should be retired to reduce variations as part of implementation plans.</p> <p>Implications 1. Delivery system products are managed across their technology life cycle. 2. Track metrics. 3. Insert new technology components at the appropriate time. 4. Review customer requirements.</p>
<p>Principle Best practices are used in design and implementation of business objectives.</p> <p>Rationale Use of best practices improves quality and consistency across architecture components (business, information, data, applications, and technology).</p> <p>Implications 1. Best practices are coordinated and communicated at an enterprise level for reuse at the project level. 2. Best practices are researched and evaluated for project value.</p>	<p>Principle Reuse of industry accepted and commercially supported architecture components (processes, systems, etc.) is an effective delivery solution.</p> <p>Rationale Over the lifetime of a business process, it may be more effective to buy than it is to build and maintain. 1. Commercial Off The Shelf (COTS) provides an integrated architecture and industry best practice. 2. COTS potentially reduces the time and expense if installed and used in a vanilla state.</p> <p>Implications 1. Define evaluation criteria and use an impartial process to select and implement systems. 2. Packages should conform to defined standards for data, application, and technology models. 3. Use the Commercial Off The Shelf (COTS) pedigree capability. When taking COTS solutions, stay within the allowable guidelines supported by the COTS vendor. Typically, business process may need to be adjusted to accommodate purchased components.</p>	<p>Principle Information is provided in a timely manner to facilitate decisionmaking.</p> <p>Rationale Partnering of information systems into transaction processing and decision support is an effective way to implement optimize each function.</p> <p>Implications 1. Data warehouses / marts are not "source" systems. 2. Data warehouses / marts must have read-only access. Updates must be reliable and come automatically and in a timely manner from the systems of record. 3. Transaction processing (OLTP) must be separate from the decision support systems - the computing demands of transaction processing are diametrically opposed to the needs of hot decision support. 4. Data warehouses / marts will not be used for source system data archiving.</p>			

Example – Diverse Business Models

Principle

The Business Architecture will accommodate diverse business models that will reflect the character of the total Armscor group.

Rationale

Especially within Armscor Business it is impractical to attempt to develop a generic business model to reflect the business processes across each business unit. The group clusters a number of diverse businesses together and should be reflected like that in the Business Architecture.

Implications

1. Armscor will have one business model.
2. Armscor Business will have a business model per business unit.
3. Shared services such as Finance and Human Resources can be modelled across the group.

Example – Buy not Build

Principle

Reuse of industry accepted and commercially supported architecture components (processes, systems, etc.) is an effective delivery solution

Rationale

Over the lifetime of a business process, it may be more effective to buy than it is to build and maintain.

1. Commercial Off The Shelf (COTS) provides an integrated architecture and industry best practice.
2. COTS potentially reduces the time and expense if installed and used in vanilla state.

Implications

1. Define evaluation criteria and use an impartial process to select and implement systems.
2. Packages should conform to defined standards for data, application, and technology models.
3. Use vanilla Commercial Off The Shelf (COTS) package capability. When tailoring COTS solutions, stay within the allowable guidelines supported by the COTS vendor. Typically, business processes must be adjusted to accommodate purchased components.

INFORMATION ARCHITECTURE

Business Objects

A list of the most common business objects that would describe the business life. This model gives a high level perspective of the type of information that the business requires. The model must be designed from a business perspective, with no or minimal reference to systems. No associations or relationships are shown on this model, to keep it simple and easy to understand.

Objects: Business Objects
Technique: UML Class Diagram

Business Object Semantic Model

A depiction of the business objects and their relationships described by the ARMOR business. These business objects will be more detailed to provide more depth and to describe the business information requirements at a low level of detail. Associations and dependencies between business objects should be shown on this model. There can be more than one model if I would simplify the representation. The models must be designed from a business perspective.

Objects: Business Objects
Associations: Business Relationships
Technique: UML Class Diagram

Business Object Description Model

For each business object a description model can be created to describe the methods and attributes of each business object.

Object: Business Object
Methods: Business Methods
Attributes: Business Attributes
Technique: UML Class Description Diagram

Business Objects Services Model

Indicate the implementation of the business objects and application services.

Class: Application Service
Class: Business Object
Technique: UML Class Description Diagram

Business Objects Entities Model

Indicate the implementation of the business objects as entities.

Entity: Business Entity
Class: Business Object
Technique: ?

Business Summary Model

This is a model that summarizes the decomposition of business processes on the highest level. The model represents mainly a list of processes and does not depict the order in which the processes are executed.

Enterprise Process: Strategically summarizes the business at the highest level.
Value Chain: A Value Chain sometimes refers to an independent business area but often spans functional boundaries to represent an end-to-end view of the business.
Process: A Process is a series of operations that take suitable inputs, add value and transform them into designated outputs.
Technique: Function Tree / Mind-mapping

Work Step Application Semantics

Graphically depicts the flow of work steps within lanes which represent the application services that support the work steps.

Work Step: A Work Step / Task (manual/automated) is undertaken as part of a step-by-step sequence to perform the Activity.
Class: Application Service
Technique: Swimlane / Column Event Driven Process Chain

Work Step Role Semantics

Graphically depicts the flow of work steps within lanes which represent the system roles that perform the work steps.

Work Step: A Work Step / Task (manual/automated) is undertaken as part of a step-by-step sequence to perform the Activity.
Actor: System Role
Technique: Swimlane / Column Event Driven Process Chain

Logical Entity Model

This is a model of representing the logical data requirements of the business. This model should be designed from a business perspective and should not be based on the implementation of the underlying databases. Ideally it should be a fully normalized model.

If there is a need to have more than one Logical Data Model it is recommended to base the split on the Business Objects defined in RIC1.

Entity: Business Data Entity
Relationship: Business Data Relationship
Technique: Entity/Relationship Diagram

Logical Entity Attribute Model

For each logical business data entity a model can be developed to describe the attributes of the entity.

Entity: Business Data Entity
Attributes: Business Data Attributes
Technique: Entity/Relationship Diagram

Physical Data Model

For each logical database a physical data model should represent the tables and their relationships. This is a logical view of the physical implementation of the database.

Entity: Table or View
Relationship: Foreign key constraints
Technique: Entity/Relationship Diagram

Database Model

A physical model showing the table, views, indexes and schemas.

Objects: View, Table, Index, Schema
Technique: Relational Database Diagram

Physical Database Model

For each physical defined database the content of the database would be defined in these models.

Database: Physical Database
Objects: Tables, views, indexes, schemas.
Technique: Relational Database Layout

BUSINESS ARCHITECTURE

Sub-Process Model (Level 3)

The model represents the decomposition of one Process into more detail. It represents a specific operation that takes place as part of a Process. It contains 2-12 Sub-Process objects that describe this operation.

Sub-process: A Sub-Process represents a specific operation that takes place within a Process.
Technique: Value Chain

Activity Model (Level 4)

This model represents the decomposition of one Sub-Process into more detail. It describes the flow of Activities in a specific sequence. It contains 2-25 Activity objects that describe the flow.

Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modeling focus areas.
Event: An Event represents a particular "state" or "Process Interface".
Decision Point: A Decision Point is used to handle parallel business, decision, multiple triggers and complex flows.
Technique: Event Driven Process Chain Diagram

Work Step Model (Level 5)

This model represents the decomposition of one Activity into more detail. It describes the specific sequence of step-by-step actions (manual/automated) that are undertaken when an Activity is performed. It contains 2-25 Work Step objects that describe this flow. Very often the model is represented as a value receiving of the steps.

Work Step: A Work Step / Task (manual/automated) is undertaken as part of a step-by-step sequence to perform the Activity.
Event: An Event represents a particular "state" or "Process Interface".
Process Interface: Represents interfaces to processes outside the scope of the current model.
Decision Point: A Decision Point is used to handle parallel business, decision, multiple triggers and complex flows.
Technique: Event Driven Process Chain Diagram

Job Description

The summary of what a job entails.

Position: An individual employee placement or assignment within a company.
Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modeling focus areas. It describes the desired results per BSC view.
Measurement Criteria: It specifies how to measure the achievement of an output.
Competency: Knowledge or skills capable of doing.
Experience: Generated from Balanced Scorecard / Cause and Effect Diagrams, Organizational charts, Function description matrices.
Technique: Organizational Chart

Business Unit Location Model

Indicate the geographical location of business units.

Country: Represents a national geographical boundary.
Province: Represents a provincial geographical boundary.
Location / Place: Represents a specific town.
Building: Represents a physical structure with an address.
Facility: Represents a specific structure.
Business Unit: An establishment where business is conducted.
Technique: Organizational Chart

Work Step Model (Level 5)

This model represents the decomposition of one Activity into more detail. It describes the specific sequence of step-by-step actions (manual/automated) that are undertaken when an Activity is performed. It contains 2-25 Work Step objects that describe this flow. Very often the model is represented as a value receiving of the steps.

Work Step: A Work Step / Task (manual/automated) is undertaken as part of a step-by-step sequence to perform the Activity.
Event: An Event represents a particular "state" or "Process Interface".
Process Interface: Represents interfaces to processes outside the scope of the current model.
Decision Point: A Decision Point is used to handle parallel business, decision, multiple triggers and complex flows.
Technique: Event Driven Process Chain Diagram

Application Database Model

Indicate the physical databases that belong or are owned by an application.

Packages: Business Applications
Component: Physical Database
Technique: UML Component Diagram

Services Data Access Model

Indicate the entities that are accessed by an application service and the type of access, i.e. (Create, Read, Update) or (Delete).

Class: Application Service
Entity: Business Data Entity
Technique: CRUD

Services Table Access Model

Indicate the tables that are accessed by an application service and the type of access, i.e. (Create, Read, Update) or (Delete).

Class: Application Service
Table: Physical Table
Technique: CRUD

Database Server Model

Show the physical deployment of physical databases to physical servers.

Component: Physical Server
Component: Physical Database
Technique: UML Deployment Diagram

System Software Portfolio

A list of system software applications such as operating systems, DBMS, network, middleware and application services.

Package: System software
Technique: UML Class Diagram

Organisation Model

A representation of the organisational structure composition.

Company: An association for carrying on business.
Group: A collection of companies under single ownership.
Business Unit: An establishment where business is conducted.
Technique: Organizational Chart

Department Model

A representation of the departmental reporting structures.

Business Unit: An establishment where business is conducted.
Department: A unit of specialized functions into which the business is divided.
Position: An individual employee placement or assignment within a company.
Employee: An individual person is related into a specific position.
Technique: Organizational Chart

Logistics Model

A model that depicts the communication connections between business units.

Location / Place: Represents a specific town.
Building: Represents a physical structure with an address.
Facility: Represents a specific structure.
Communication Method: Represents the manner in which communication takes place, e.g. telephone, email.
Technique: Communication Model

Locations

This is a model that describes the geographical locations / places where business is conducted, with an indication of the major business connections. Note that it does not describe business units.

Country: Represents a national geographical boundary.
Province: Represents a provincial geographical boundary.
Location / Place: Represents a specific town.
Building: Represents a physical structure with an address.
Facility: Represents a specific structure.
Technique: Geographical Map

Application Portfolio

A list of all the business applications used within a sector. This should exclude the infrastructure applications such as email, spreadsheets and word processing, as well as system software e.g. operating system, middleware and database management systems.

Packages: Business Applications
Technique: UML Class Diagram

Application Structures

A logical breakdown of an application based on the application functionality - usually based on the user navigation structure.

Packages: Application Packages
Associations: Hierarchy
Technique: UML Class Diagram

Services

A list of services provided by an application package, and the dependencies between the services.

Class: Application Service
Associations: Dependencies
Technique: UML Class Diagram

System Software Portfolio

A list of system software applications such as operating systems, DBMS, network, middleware and application services.

Package: System software
Technique: UML Class Diagram

Server Description

A description of a server in terms of hardware components and system software components.

Component: Hardware components
Package: System software
Associations: Dependencies
Technique: UML Component Diagram

Business Role Model

A list of the business roles.

Role: Represents the part that must be played in the execution of similar activities.
Technique: Organizational Chart

Team Model

A list of teams.

Team: A group of people that work together temporarily to achieve defined objectives.
Technique: Organizational Chart

Activity Detail

Zoom in on a specific activity to describe it in more detail.

Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modeling focus areas.
Role: Represents the part that must be played in the execution of similar activities.
Team: A group of people that work together temporarily to achieve defined objectives.
Package: Application Packages
Objects: Business Objects (Information Items)
Measurement Criteria: Specifies how to measure a process.
Technique: Cause and Effect Diagram

Work Step Detail

Zoom in on a specific work step to describe it in more detail.

Work Step: A Work Step / Task (manual/automated) is undertaken as part of a step-by-step sequence to perform the Activity.
Actor: System Role
Class: Application Service
Objects: Business Objects (Information Items)
Technique: Function Allocation Diagram

Deployable Environments

This model shows a collection of deployable components that can be deployed together to form a business process.

Technique: UML Component Diagram

Deployable Components

This model shows how the services are physically deployed to be executed as part of the business process.

Technique: UML Component Diagram

Application Roles Model

Indicate the system roles that should have access to a particular service, as well as the type of access.

Class: Application Service
Actor: System Role
Technique: UML Sequence/Activity Diagram

Service Description

A technical description of a service, showing the logic of the service.

Technique: UML Statechart/Activity Diagram

Application Server Model

Show the physical deployment of application deployable environments to physical servers.

Component: Physical Server
Component: Application Deployable Environment
Technique: UML Deployment Diagram

Processing Site Description

For each processing site described in RIC2 a model should be developed to describe the processing site in terms of servers and the connectivity between them.

Component: Server
Association: Connectivity
Technique: UML Component Diagram

Activity Application Semantics

Graphically depicts the flow of activities within lanes which represent the application packages that support the activities.

Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modeling focus areas.
Packages: Application Packages
Technique: Swimlane / Column Event Driven Process Chain

Employee Performance Contract

The structuring of an employee contract for the attainment of specific outputs that are aligned with the strategic objectives.

Employee: An individual person is related into a specific position.
BSC View: It represents four views, e.g. Financial, Customer, Internal Business Process, Learning and Growth.
Output: It describes the desired results per BSC view.
Measurement Criteria: It specifies how to measure the achievement of an output.
Technique: Generated from Balanced Scorecard / Cause and Effect Diagrams and Organizational charts

Business Cycles

A list of the major business cycles within the business, e.g. financial reporting cycle, human resource performance assessment cycle, purchasing cycle.

Cycle: Business Cycle
Technique: Event Model

Business Cycle Description

Describe each of the business cycles in RIC2 in more detail, address events and the transitions.

Event: Business Event
Transition: Business Transitions
Technique: Event Model

Logical System Role Model

A list of generic system roles that would group certain activities into logical categories to simplify information security management.

Actor: System Role
Technique: UML Use Case Diagram

Systems Role Models

A list of actual system roles required for a specific application, database or network.

Technique: UML Use Case Diagram

Deployable Environments

This model shows a collection of deployable components that can be deployed together to be executed as part of the business process.

Technique: UML Component Diagram

Batch Services Schedule Model

Show the batch schedule - sequence of execution of batch services.

Activity: Application Service
Technique: UML Sequence/Activity Diagram

Processing Site Description

For each processing site described in RIC2 a model should be developed to describe the processing site in terms of servers and the connectivity between them.

Component: Server
Association: Connectivity
Technique: UML Component Diagram

Logical Technology Architecture

This is a logical view of the technology architecture showing a conceptual view of the backbone network of the business, as well as the major processing sites available.

Component: Processing Site
Association: Logical network connections
Technique: UML Component Diagram

Strategy Model

It is a model that depicts the vision and major strategic objectives that the Company's strategy comprises of.

Vision: It describes what the business aims to achieve.
Strategic Objectives: It represents a desirable situation or accomplishment that is aimed at.
Technique: Objective Diagram

Balanced Scorecard Model

This model depicts the outputs per balance scorecard view in support of the strategic objectives.

BSC View: It represents four views, e.g. Financial, Customer, Internal Business Process, Learning and Growth.
Output: It describes the desired results per BSC view.
Measurement Criteria: It specifies how to measure the achievement of an output.
Technique: Balanced Scorecard / Cause and Effect Diagram

Business Key Performance Indicators

List of the indicators that are used to indicate how to measure processes.

BP KPI: An indicator of performance achievement
Technique: Key Performance Indicator Tree

Activity Role Semantics

Graphically depicts the flow of activities within lanes which represent the business roles that perform the activities.

Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modeling focus areas.
Role: Represents the part that must be played in the execution of similar activities.
Team: A group of people that work together temporarily to achieve defined objectives
Technique: Swimlane / Column Event Driven Process Chain

Processing Structure

This model depicts a logical view of the automation of the business cycles indicating the transition between states and the level of automation.

State: State of business
Transition: Event
Technique: UML Statechart/Sequence Diagram

Processing Cycle

This model is showing the actual implementation of the processing cycles that automate the business cycles.

State: State of system
Transition: Event
Technique: UML Statechart/Sequence Diagram

Processing Schedule

Based on the processing cycles defined in RIC2 this model will be developed indicating the various activities that should be performed at specific times by specific systems or roles.

Activity: Program/activity
Association: Dependency
Role: Person/role/service
Technique: UML Activity Diagram

TECHNOLOGY ARCHITECTURE

System Software Portfolio

A list of system software applications such as operating systems, DBMS, network, middleware and application services.

Package: System software
Technique: UML Class Diagram

Server Description

A description of a server in terms of hardware components and system software components.

Component: Hardware components
Package: System software
Associations: Dependencies
Technique: UML Component Diagram

Application Server Model

Show the physical deployment of application deployable environments to physical servers.

Component: Physical Server
Component: Application Deployable Environment
Technique: UML Deployment Diagram

Processing Site Description

For each processing site described in RIC2 a model should be developed to describe the processing site in terms of servers and the connectivity between them.

Component: Server
Association: Connectivity
Technique: UML Component Diagram

Logical Technology Architecture

This is a logical view of the technology architecture showing a conceptual view of the backbone network of the business, as well as the major processing sites available.

Component: Processing Site
Association: Logical network connections
Technique: UML Component Diagram

Example – Conceptual FW Detail

Zachman Definition

“The Business Process Model”

This is a model of the actual Business Processes that the enterprise performs, quite independent of any “system” or implementation considerations and any organisational constraints. It can be represented as a “structured methods”-style model expressing the business transformations (processes) and their inputs and outputs.

Process: Business Process
Input/Output: Business Resources

	Data	Function	Network	People	Time	Values
Planner	R1C1	R1C2	R1C3	R1C4	R1C5	R1C6
Owner	R2C1	R2C2	R2C3	R2C4	R2C5	R2C6
Designer	R3C1	R3C2	R3C3	R3C4	R3C5	R3C6
Builder	R4C1	R4C2	R4C3	R4C4	R4C5	R4C6
Sub-contract User	R5C1	R5C2	R5C3	R5C4	R5C5	R5C6

BIDAT

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Proposed Primitive Models

Sub-Process Model (Level 3)

This model represents the decomposition of one Process into more detail. It represents a specific operation that takes place as part of a Process. It contains 2-12 Sub-Process objects that describes this operation.

Sub-process: A Sub-Process represents a specific operation that takes place within a Process.

Technique: Value Chain

Activity Model (Level 4)

This model represents the decomposition of one Sub-Process into more detail. It describes the flow of manual and automated Activities in a specific sequence. It contains 2-25 Activity objects that describes this flow.

Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modelling focus areas.

Event: An Event represents a particular “state”

Process Interface: Represents interfaces to processes outside the scope of the current model.

Decision Point: A Decision Point is used to handled parallel branches, decision, multiple triggers and complex flows.

Technique: Event Driven Process Chain Diagram

Example – Composite Model

	Data	Function	Network	People	Time	Values
Planner	R1C1	R1C2	R1C3	R1C4	R1C5	R1C6
Owner	R2C1	R2C2	R2C3	R2C4	R2C5	R2C6
Designer	R3C1	R3C2	R3C3	R3C4	R3C5	R3C6
Builder	R4C1	R4C2	R4C3	R4C4	R4C5	R4C6
Sub-contractor	R5C1	R5C2	R5C3	R5C4	R5C5	R5C6
User						

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BIA

Proposed Composite Model

Activity Detail

Zoom in on a specific activity to describe it in more detail.

Activity: An Activity is a single (manual/automated) action that is executed as part of a Sub-Process. Activities are executed in parallel or in sequence and collectively form a process flow. Through its association with roles, applications and documents, it is the link to other modelling focus areas.

Role: Represents the part that must be played in the execution of similar activities.

Team: A group of people that work together (temporarily) to achieve defined objectives

Packages: Application Packages

Objects: Business Objects (Information items)

BP KPI: Specifies how to measure a process.

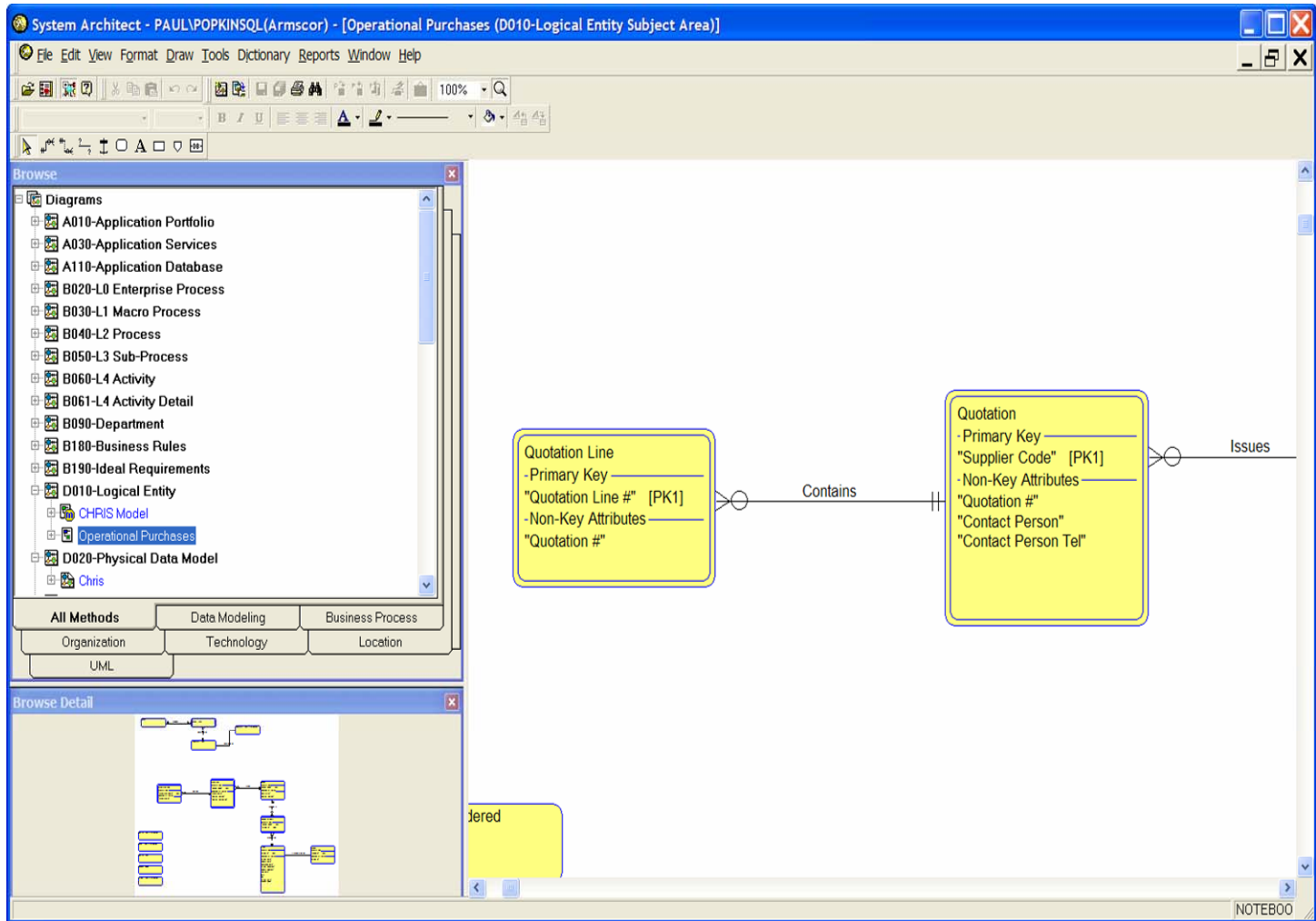
Technique: Function Allocation Diagram

EA Tool Selection

The tool was selected based on the EA Conceptual Framework. The following criteria were used in selecting a tool from System Architect, Corporate Modeler (CaseWise) and Aris set of tools (derived from TOGAF 8.1)

- Frameworks supported
- Methodologies supported
- Meta-model
- Interfaces
- Single Repository
- Modelling
- User Interface
- Reports
- Simulation
- Security
- Infrastructure
- Administration
- Local Support
- Cost

EA Tool Selected – System Architect

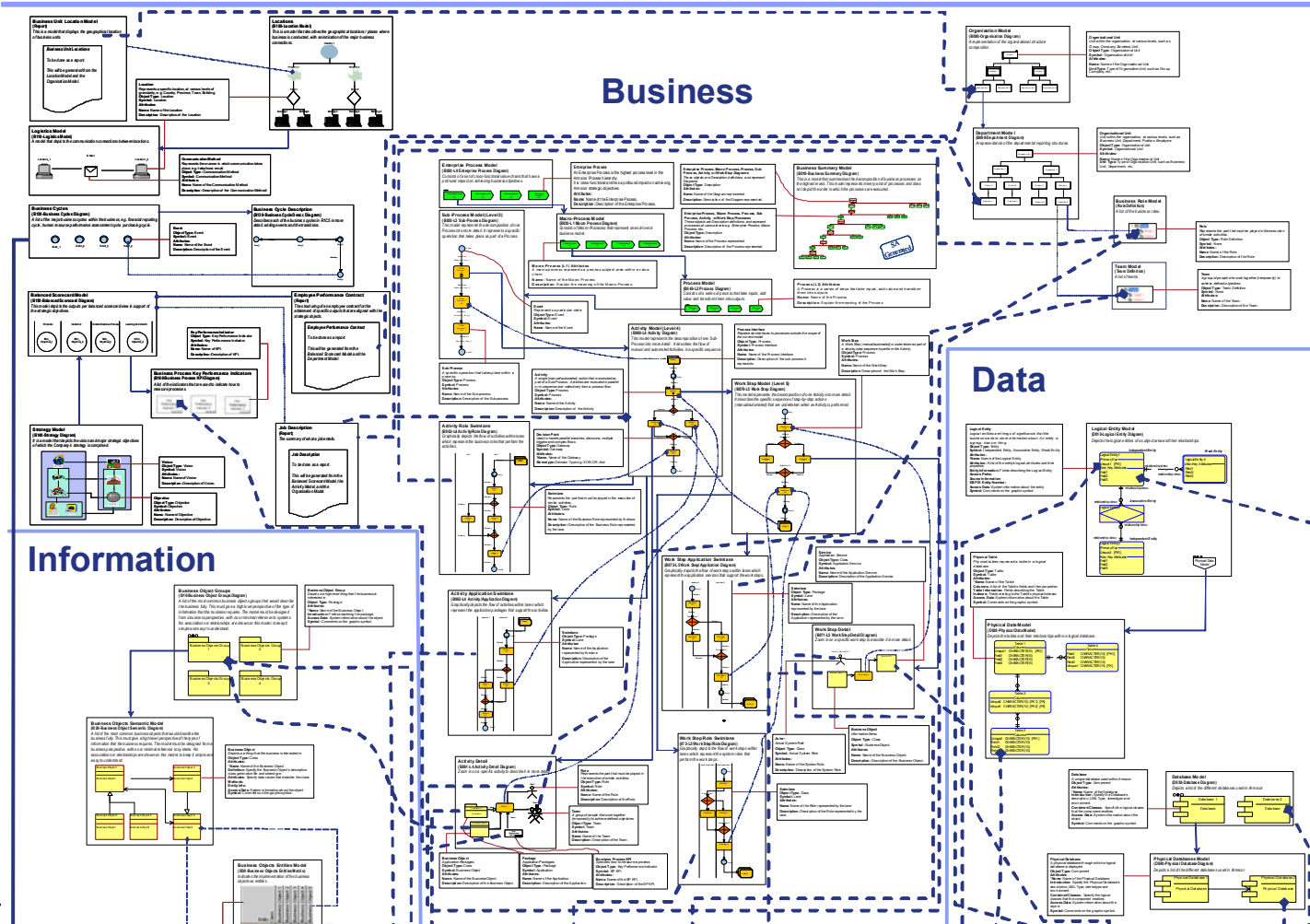


EA Meta-model Developed

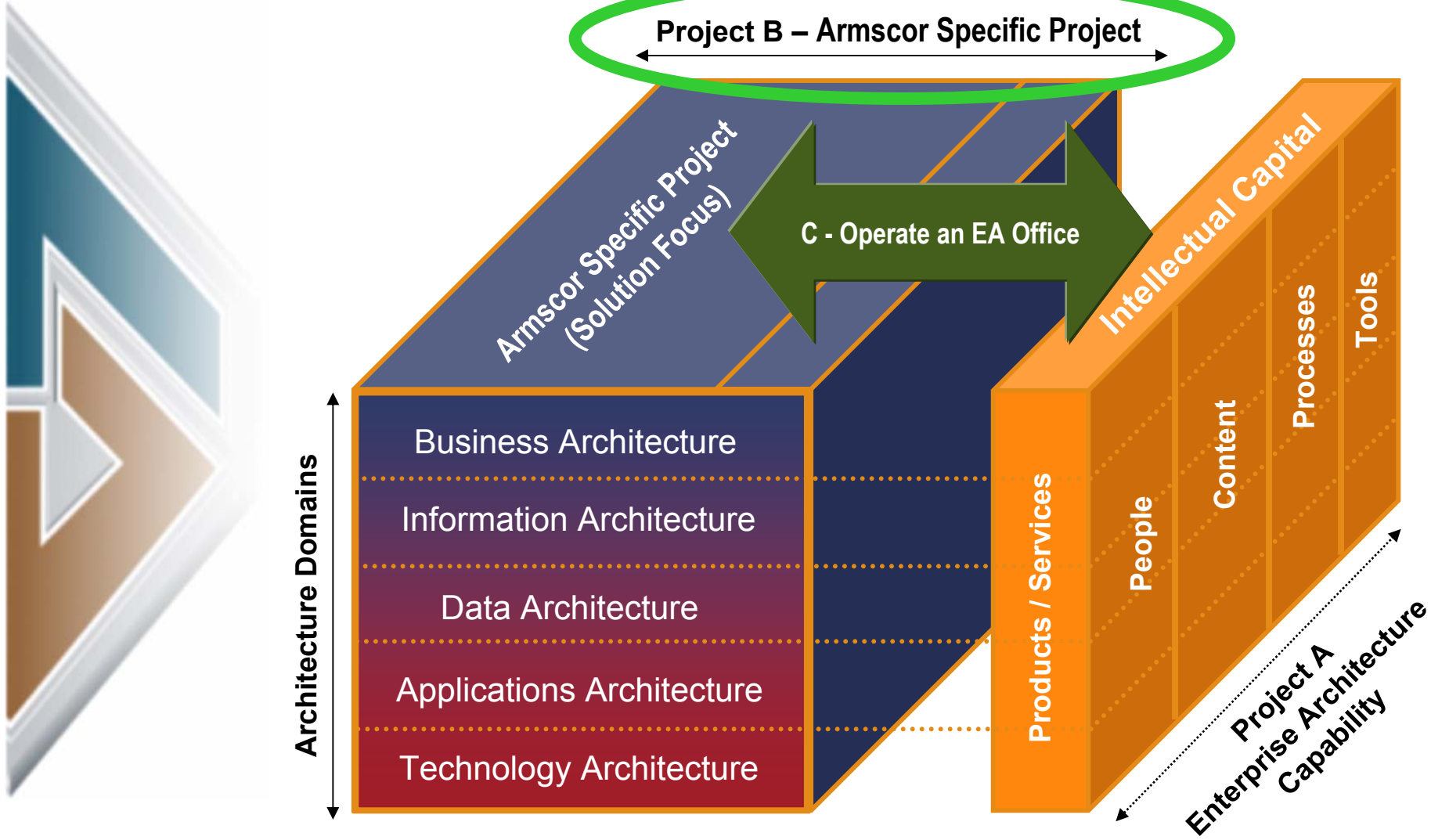
BUSINESS Release 1.00
INFORMATION Release 1.00
DATA Release 1.00
APPLICATION Release 1.00
TECHNOLOGY Release 1.00

Enterprise Architecture Meta Model

March 2005
 Version 1.00



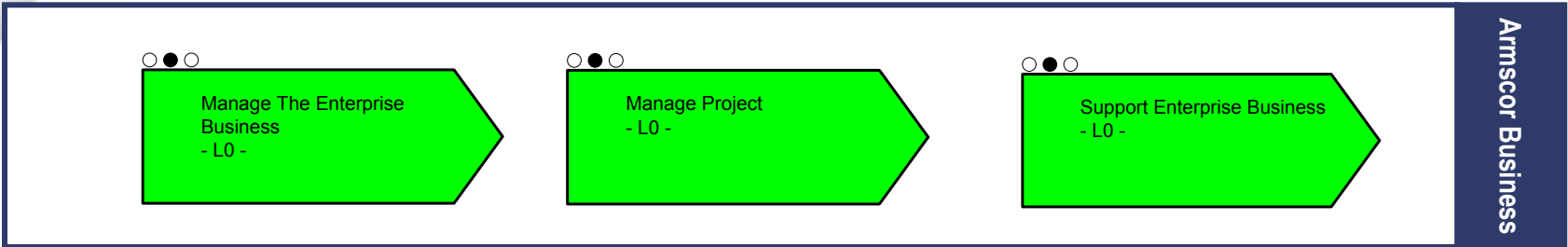
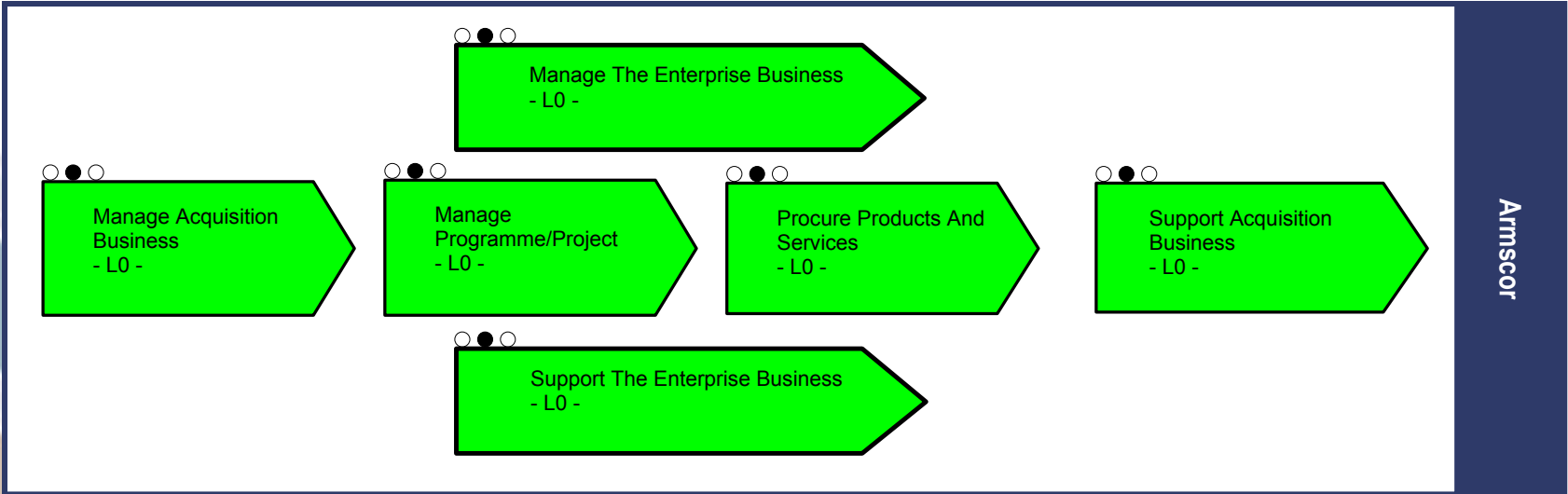
EA Approach



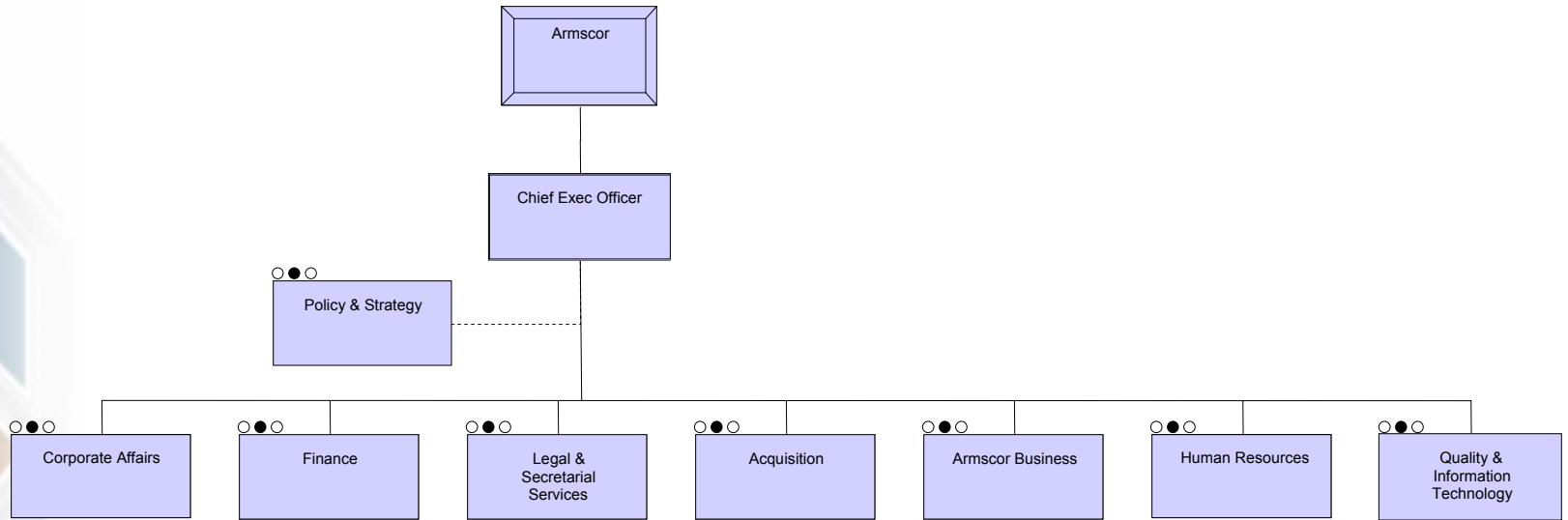
Pilot Project

- **Define high level models across all 5 domains of EA**
 - Business Process Model
 - Organisational Structure
 - Mission, Vision, KPIs
 - Data Model
 - Application Portfolio
 - Infrastructure
- **Mapping across domains**
 - Process to Applications and KPIs
 - Data to Applications
 - Infrastructure to Applications and Data

Armcor Business Process Model: Level 0



Business Organisation



Armcor Mission and Vision

Armcor



To meet the acquisition, maintenance and disposal needs of clients.

Mission

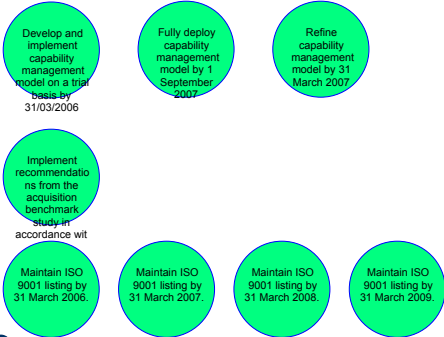
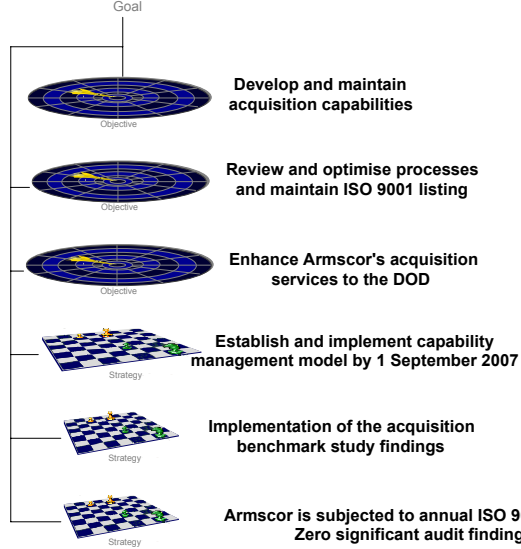
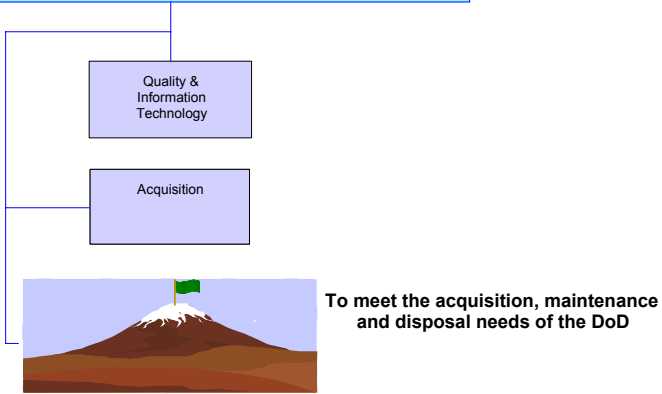


To be a South African and global centre of technical excellence

Vision

Key Result Area 1

The Corporation must acquire defence matériel, facilities and services

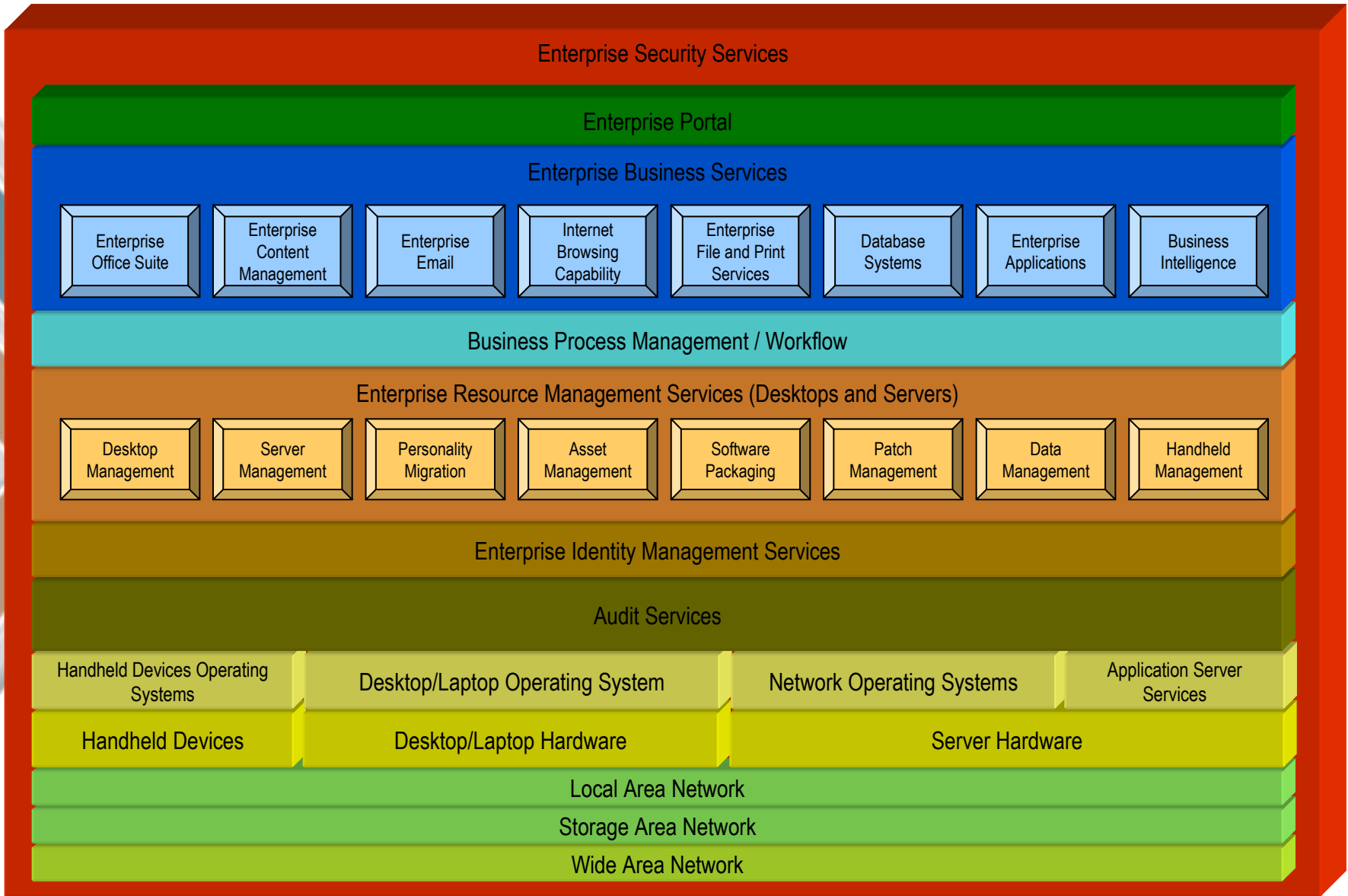


Gateway to Defence Solutions

Process/As-Is Application Mapping

Armcor Enterprise Process	Manage The Enterprise Business	10
	Manage Acquisition Business	6
	Manage Programme / Project	5
	Procure Products And Services	12
	Support Acquisition Business	5
	Support The Enterprise Business	80
Support the Enterprise Business	Provide Financial Services	12
	Provide Human Resources Services	26
	Provide Security Services	3
	Provide Information And Communication Systems, Services And Technology	16
	Manage Infrastructure Services And Other Support Services	19
	Provide Quality Management Services	4
	Provide Configuration Services	0
Manage the Enterprise Business	Provide Legal Service	0
	Monitor Business Performance	4
	Govern The Business	2
	Manage Stakeholder Relations	4
	Manage Business Strategy	0
	Manage Risk	0

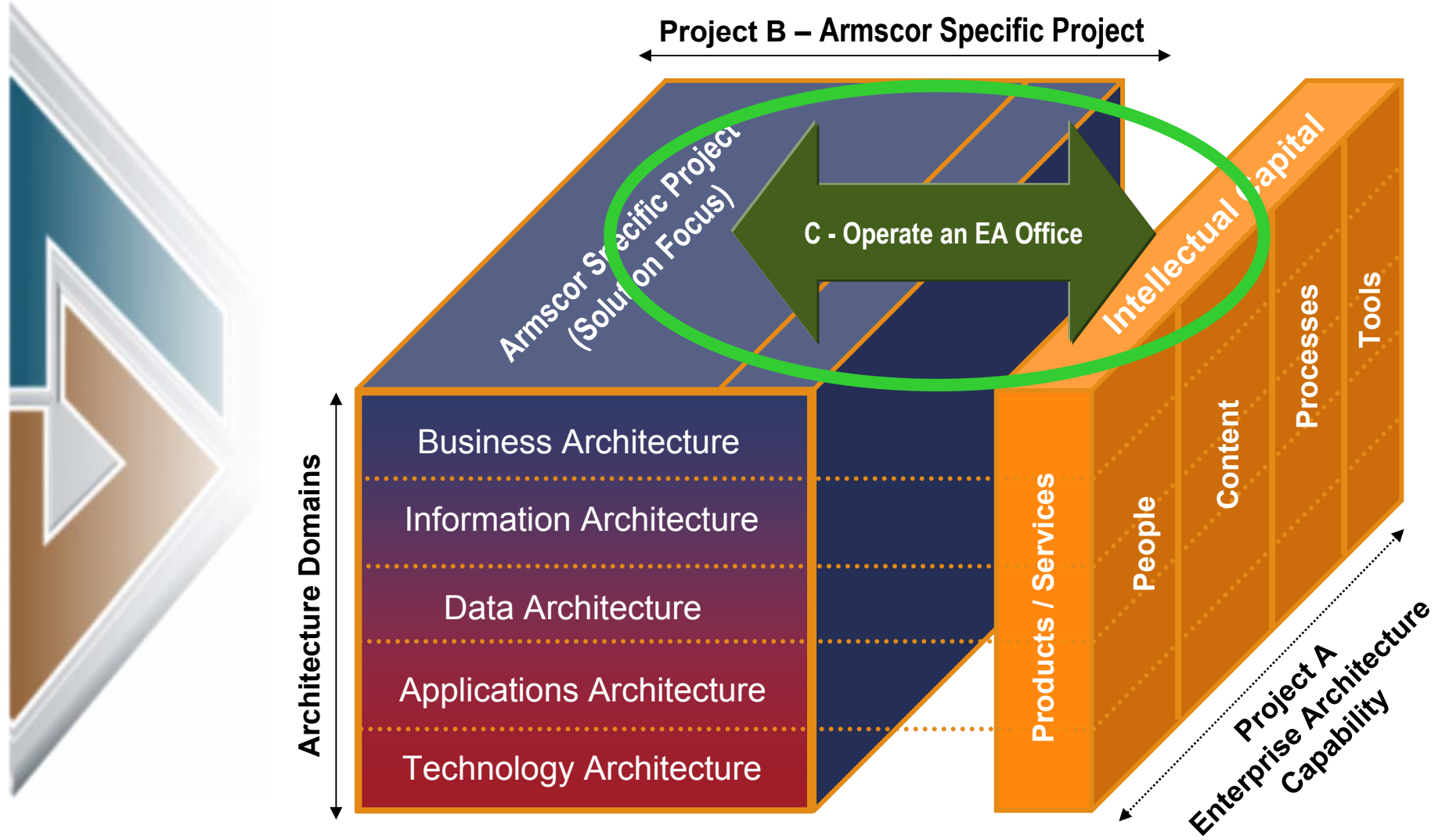
Conceptual Technology Architecture



Presentation Outline

- **Background**
- **Rationale for Enterprise Architecture**
- **EA Approach**
- **EA Capability**
- **User Requirement Specification**
- **Conclusion**

EA Approach



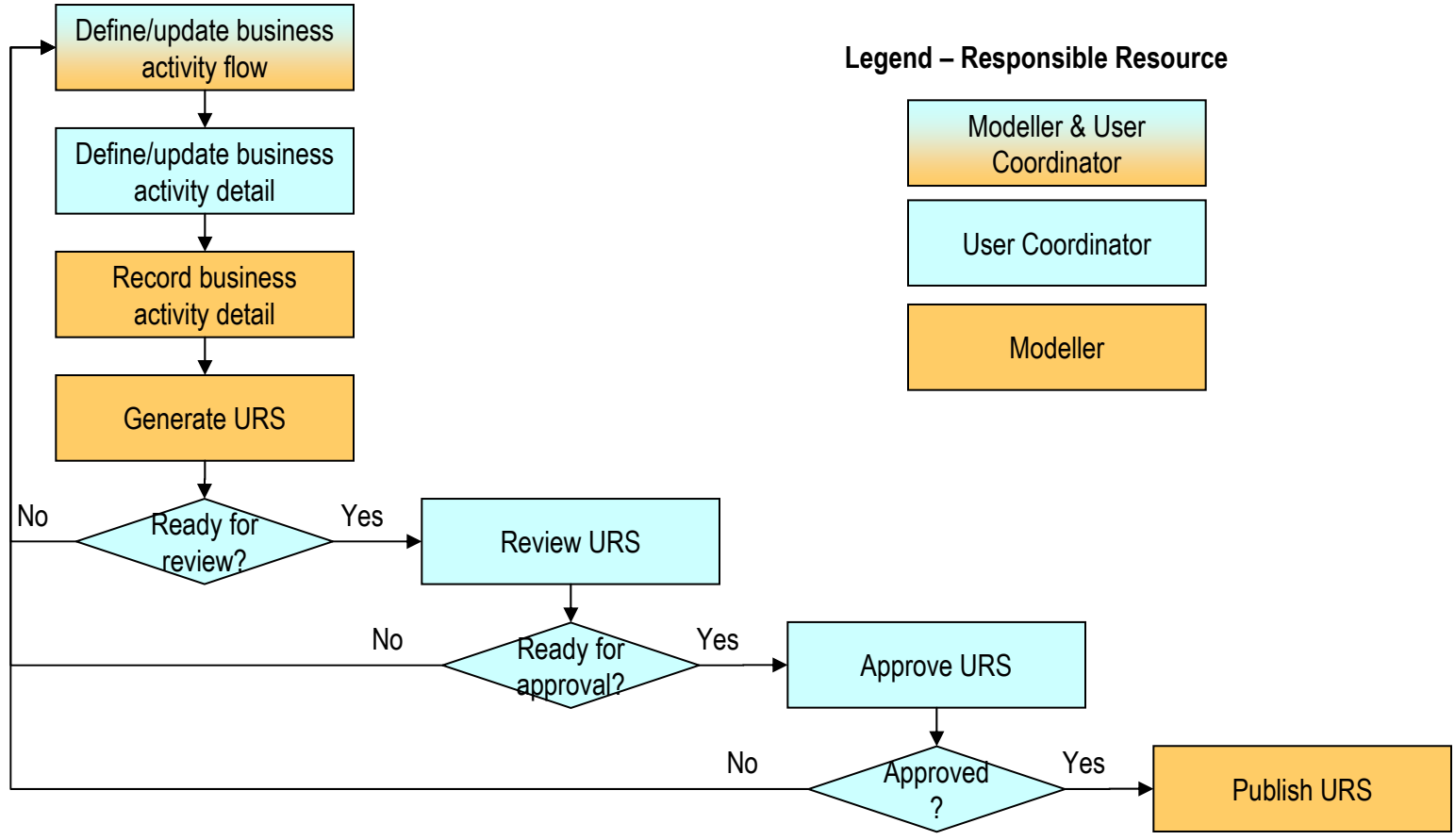
Project Outcome

**A comprehensive and
representative User
Requirement Specification
generated from the EA practice**

Key Project Principles

- **No workshops!**
- **Subject Matter Experts as key facilitators**
- **Re-use previous material**
- **Use appropriate tools**
- **Project management**

Project Approach



EA - Conceptual Application Architecture

Agreement System

The system required to establish an agreement between the supplier and the client and define the product to be delivered.

Enterprise System

The system required to provide and manage resource and infrastructure necessary to support projects and ensure the achievement of organisational objectives.

Project System

The system required to manage project plans, assessment of actual achievements and progress against plan, as well as control the execution of the project through to fulfilment.

Technical System

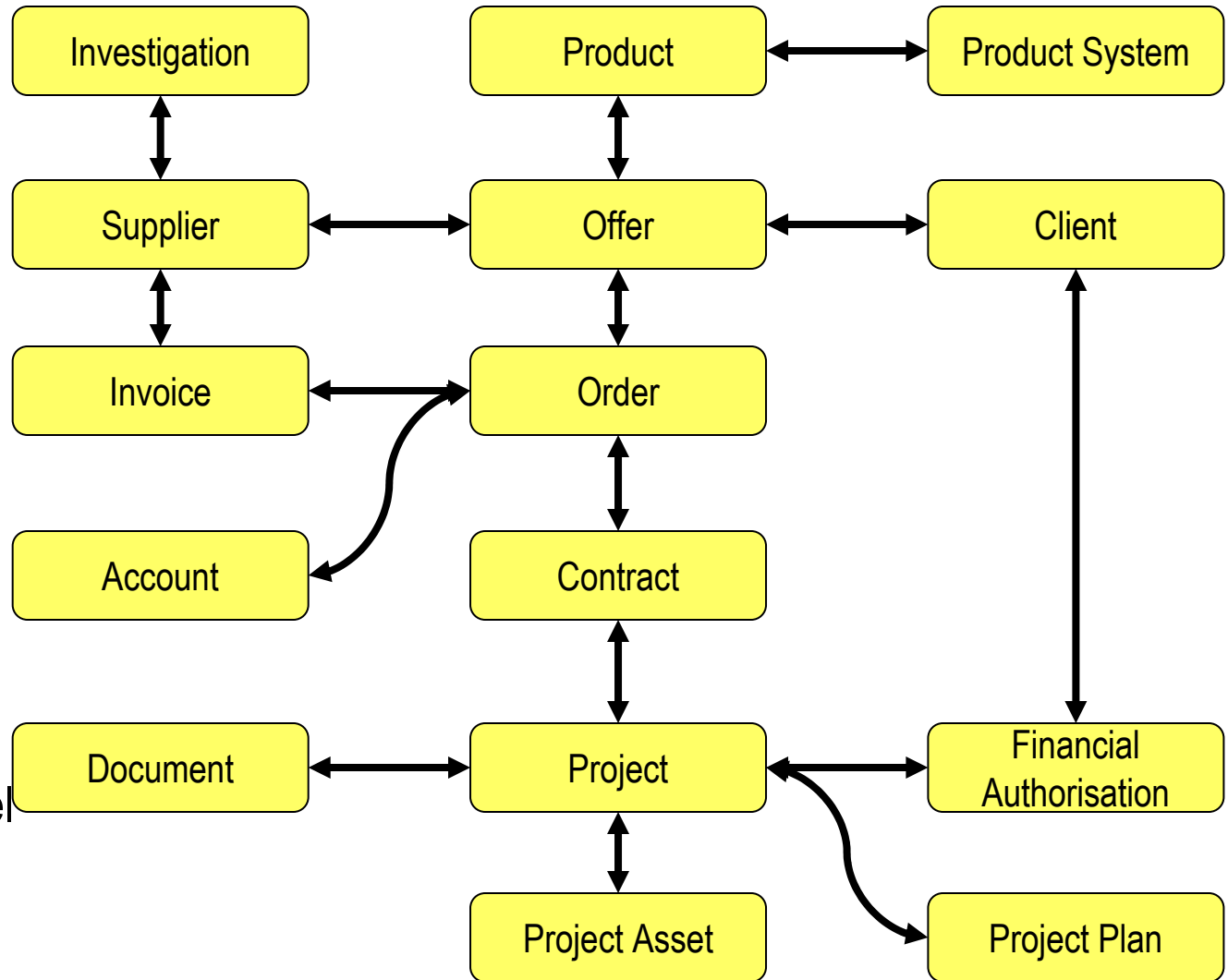
The system required to define the requirements for the product system, to transform the requirements into an effective product and to sustain the provision of the product system through to disposal.

Source: ISO15288

The four systems identified in the ISO15288 standard were used to classify activities for the purposes of the User Requirement Specification.

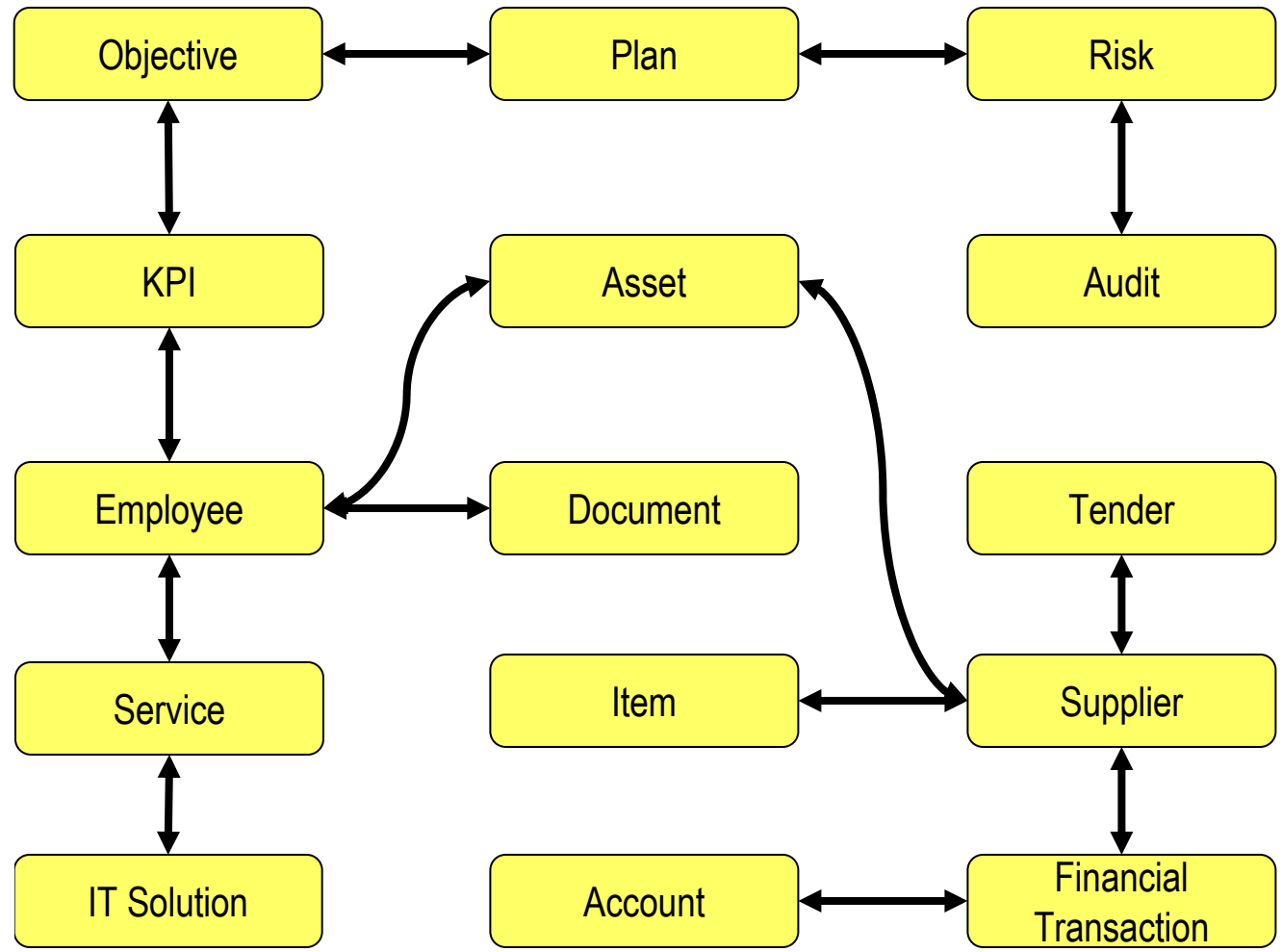
Current application portfolio not used to prevent risk of restating the current systems. The specification should be based on the business process and not the current systems.

Conceptual Data Model: Core



High level data model for Acquisition to be used to indicate data requirement for URS.

Conceptual Data Model: Internal



High level data model for internal processes to be used to indicate data requirement for URS.

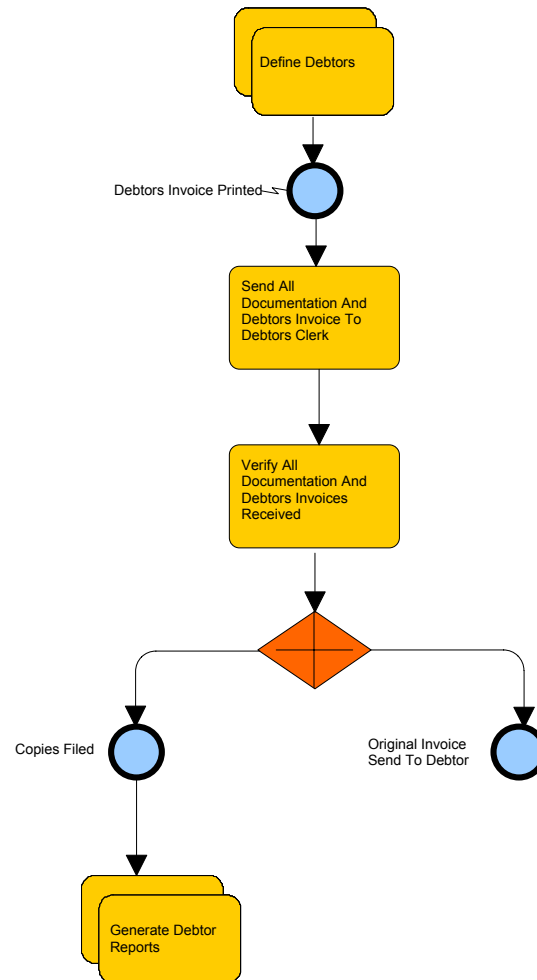
Approach and Tools

Define Activity Flow diagrams



Business Activity Flow - Example

Define Activity Flow diagrams



Approach and Tools

Define Activity Flow diagrams



Export

Capture activity detail



Business Activity Detail Required

- **Activity Description**
- **Activity Frequency**
- **Role – at least Responsible and Accountable**
- **Data**
- **Business System**
- **Report**
- **Documents**
- **Business Rule**

Capture Activity Detail

Capture activity detail



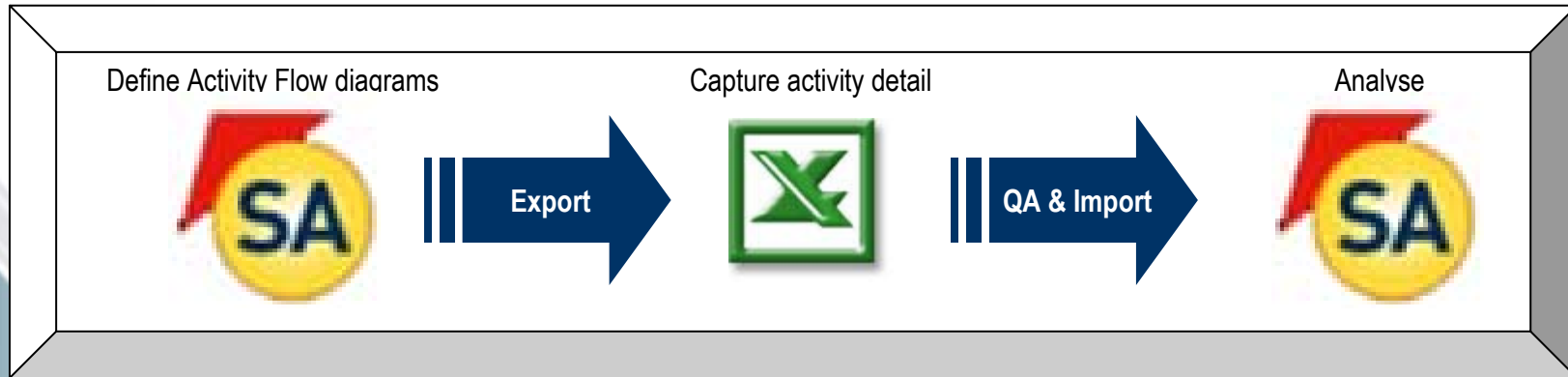
Microsoft Excel - Define Debtors.xls

File Edit View Insert Format Tools Data Window Help

100% Arial 10 B I U

	A	B	C
1	Name	Description	Frequency
5	Capture Financial Transaction (TJ) And Generate Financial Serial Number	Financial serial number generated in sequence by system. Create accounting transaction on system i.e. creating the journal (debit and credit entries).	Daily
6	Print The Transaction	Physical print out of journal transaction	Daily
7	Link Journal Printout To Request Documentation	Attach journal print out and relevant request documentation for further processing.	Daily
8	Send Journal And Supporting Documentation For Scrutinizing	Physically take the journal and supporting documentation to the role responsible for scrutinising documentation	Daily
9	Approve Transactions	Check journal transactions and amounts for correctness.	Daily
10	Receive System Generated Control Sheets	System generate control sheets reflecting invoice numbers; debtors information.	Daily
11	Send Control Sheet To Financial Sections And Financial Officer	Financial officer updates invoice on system.	Daily
12	Send A Summarised Control Sheet To Debtors Clerk	Debtors Clerk receives a summarised control sheet that will indicate how many invoices needs to be processed for the day and ensure that invoices are updated on the system	Daily
13	Send All Documentation And Debtors Invoice To Debtors Clerk	Debtors Clerk receives invoice with supporting documentation	Daily
14			
15	Verify All Documentation And Debtors Invoices Received	Debtors Clerk authenticity of invoice	Daily
16			

Approach and Tools



Import

Analyse



Model Object - BPMN Process - Approve Transactions

Name: Approve Transactions

Introduction | Level Info | URS Documents | URS Data | URS Additional | URS Roles | URS Sub-process | Refer: < >

Description: Alter corrective actions were made on the system the transaction is approved

OK Cancel Spell Delete

Model Object - BPMN Process - Approve Transactions

Name: Approve Transactions

Introduction | Level Info | URS Documents | URS Data | URS Additional | URS Roles | URS Sub-process | Refer: < >

Role Accountable: Manager
Define Check Choices...

Role Responsible: Senior Financial Officer Treasury
Define Check Choices...

Role Consult:
Add Modify Remove
Define Check Choices...

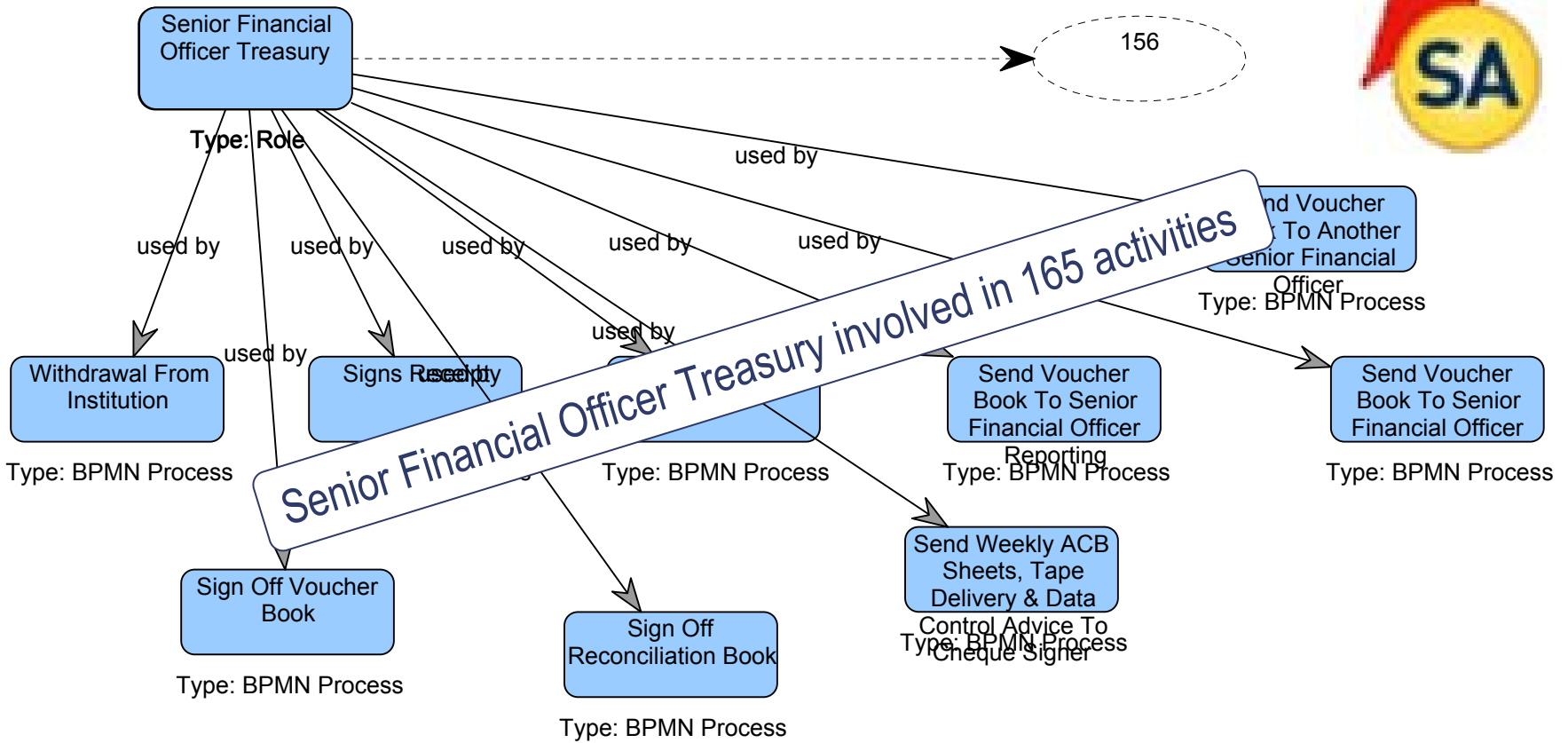
Role Inform:
Add Modify Remove
Define Check Choices...

OK Cancel Spell Delete Apply

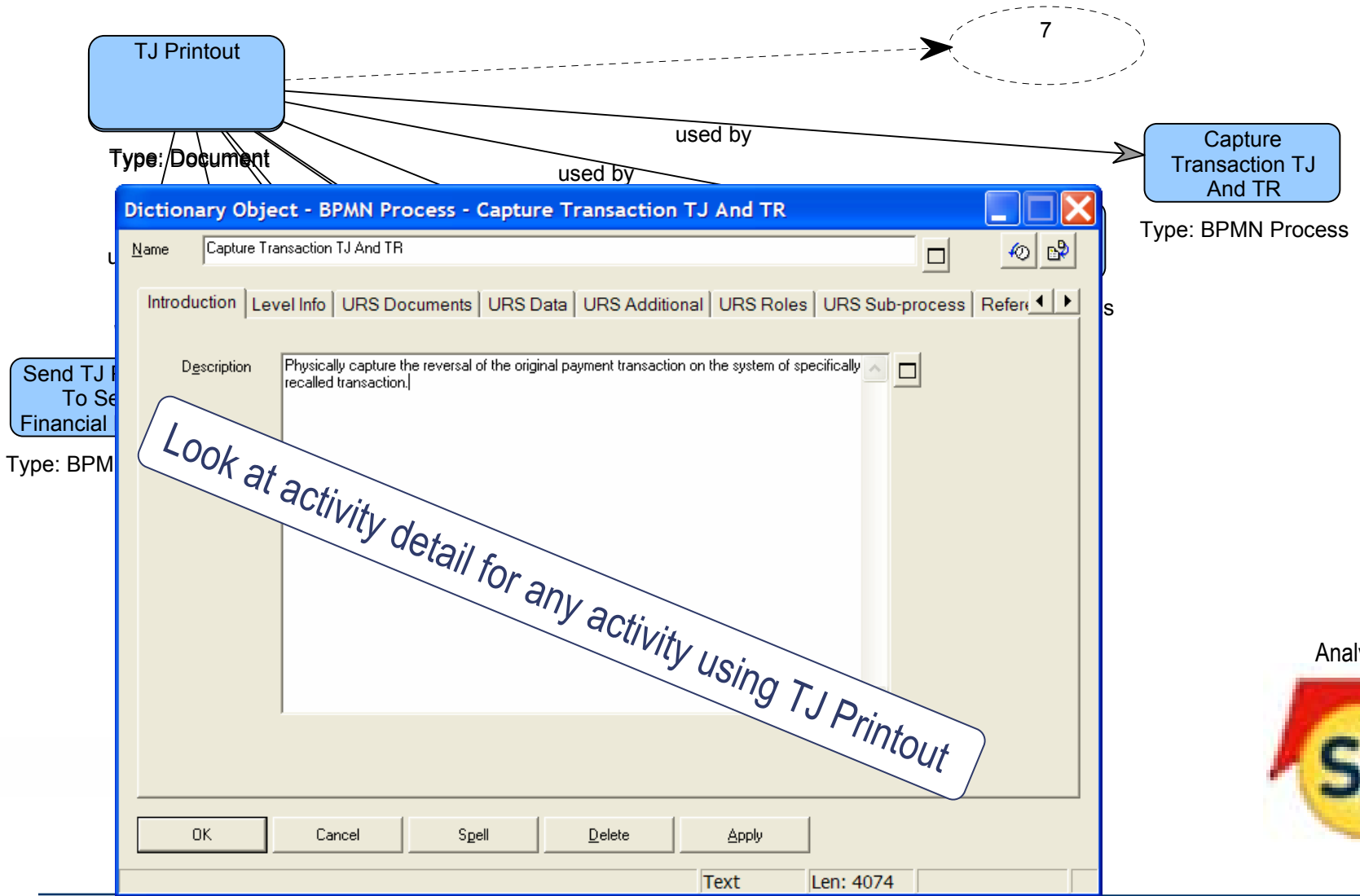
One Of Len: 80

Analyse – Role Accountability

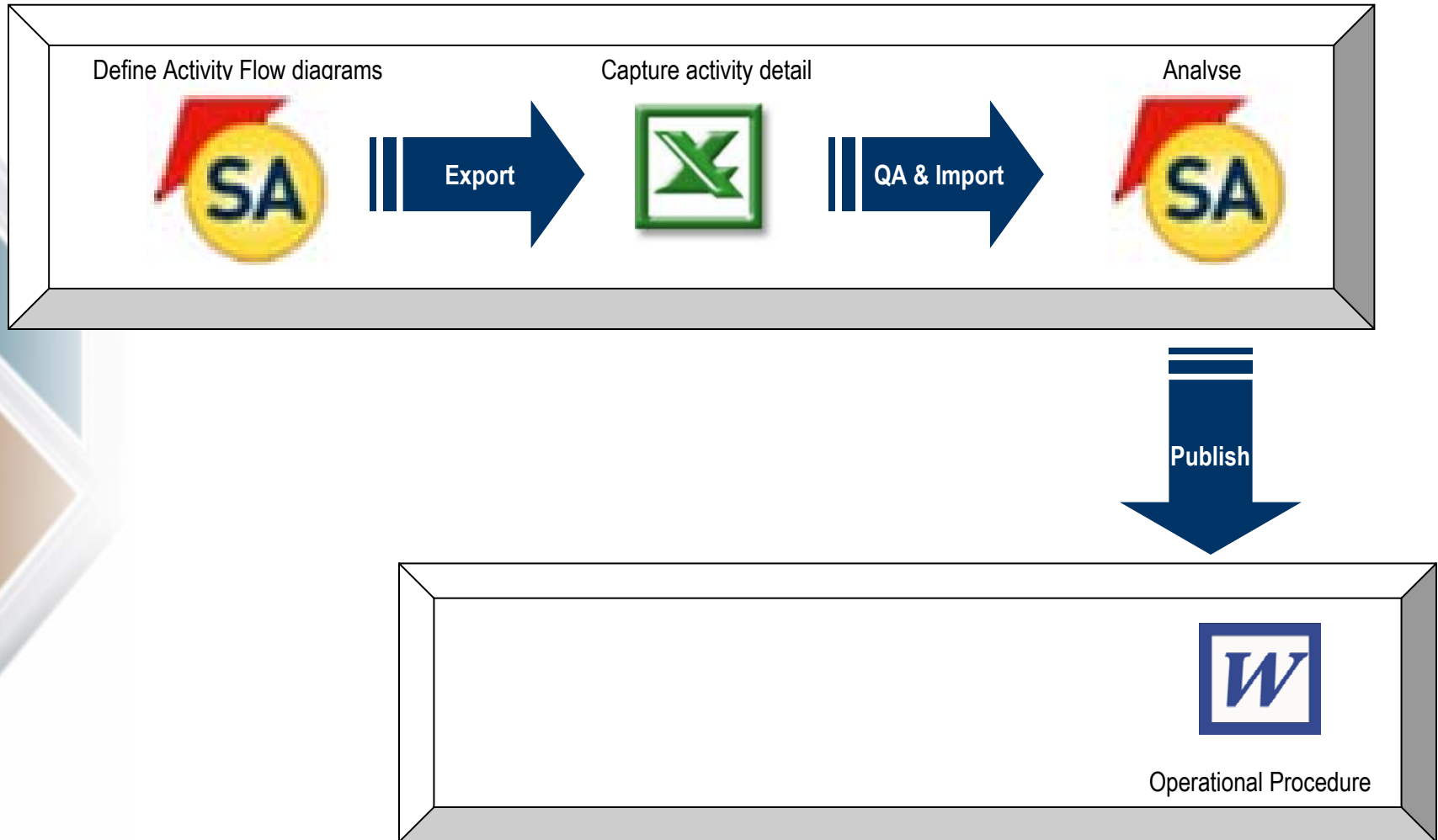
Analyse



Analyse – Document



Approach and Tools



Operational Procedure

- **Generated based on models in System Architect**
- **Generated in the standard Armscor procedure format**



Operational Procedure

Example – Operational Procedure

AR Define Debtors.doc - Microsoft Word

File Edit View Insert Format Tools Table Window Help

Normal Times New Roman 12 B I U

Times New Roman 12 B I U

3 2 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

6. PROCESS TABLES

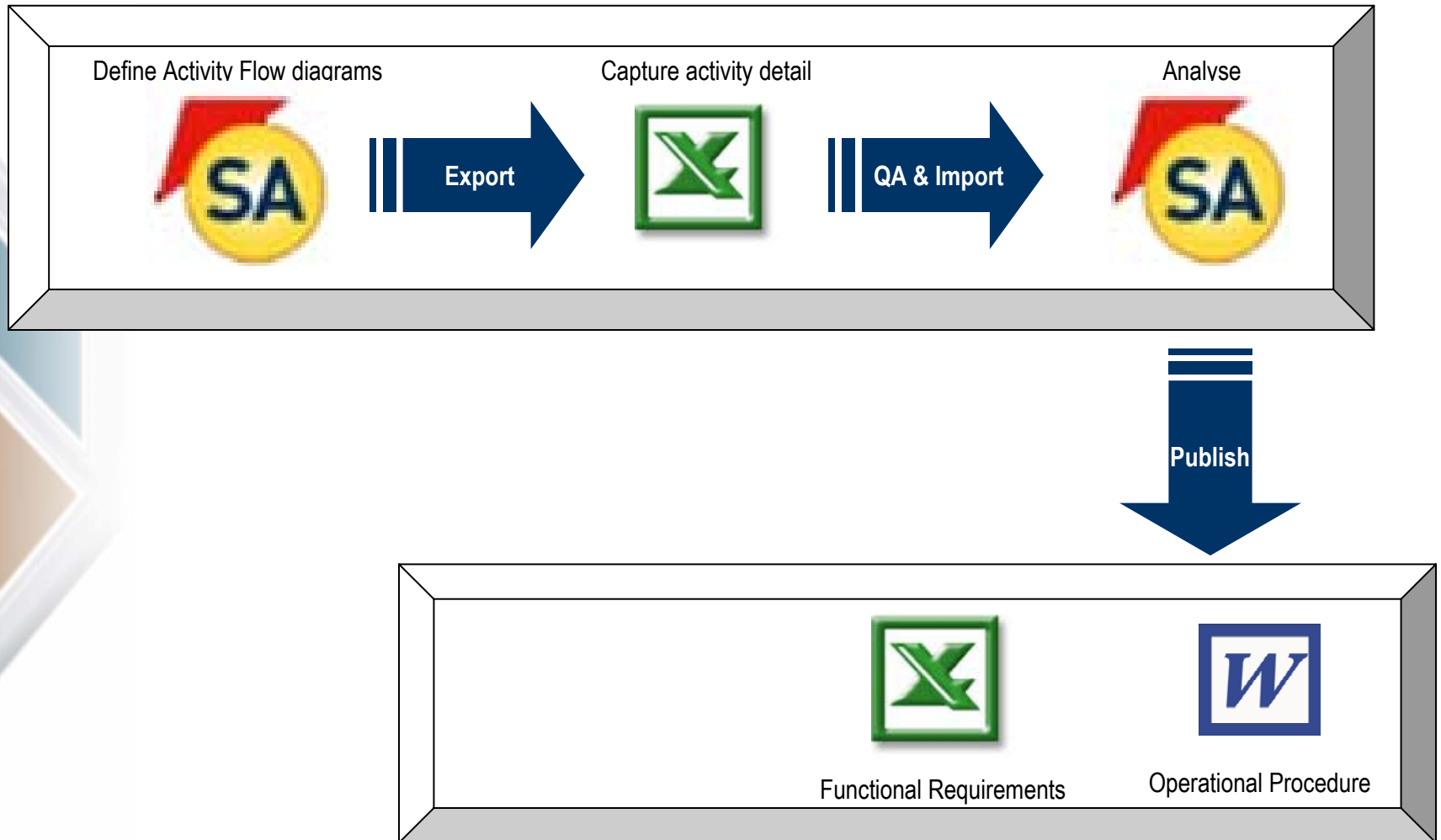
6.1. Activity Tables

Activity	Description	Frequency	Documents, Reports	Accountability (Responsible, Accountable, Consult Inform)
Generate Debtor Reports	Generate Debtor Reports	Ad hoc		
Send Request To Financial Officer	Request handed to Financial Officer for further processing	Daily	Documents: ▪ Request (In)	Debtors Financial Officer (R) Financial Officer Bud Control (I) Manager Budget Control (A)
Create Debtor And Debtor Account	Check debtor list to see whether debtor exist. If debtor does not exist, create on system. Choose debtor account number. Update debtor details if necessary. Business Rules: ▪ Valid debtor	Daily	Documents: ▪ Debtor Request Supporting Documentation (In) ▪ Update Debtors List (Out)	Assistant Manager (A) Debtors Financial Officer (R)
Capture Financial Transaction	Financial serial number generated in sequence	Daily	Documents:	Assistant Manager (A)

Draw AutoShapes

Page 8 Sec 4 8/11 At Ln Col REC|TRK|EXT|OVR English (U.S.)

Approach and Tools



Functional Requirements

- **Business Systems – based on ISO15288**

Functional Requirements



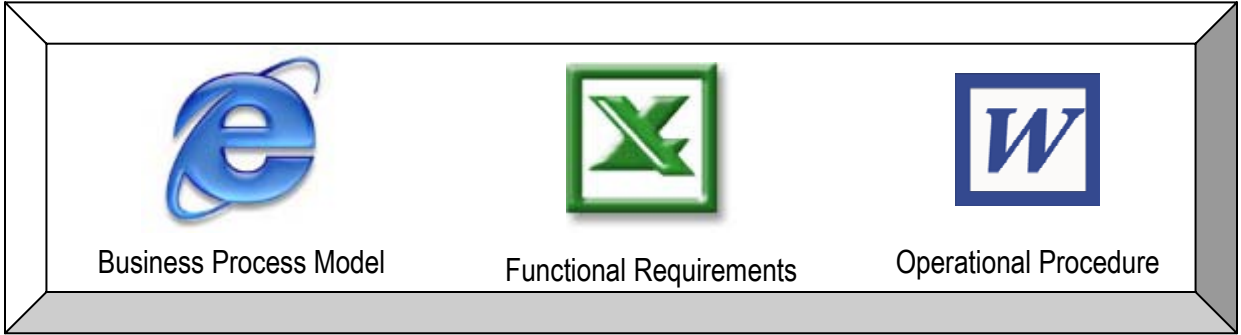
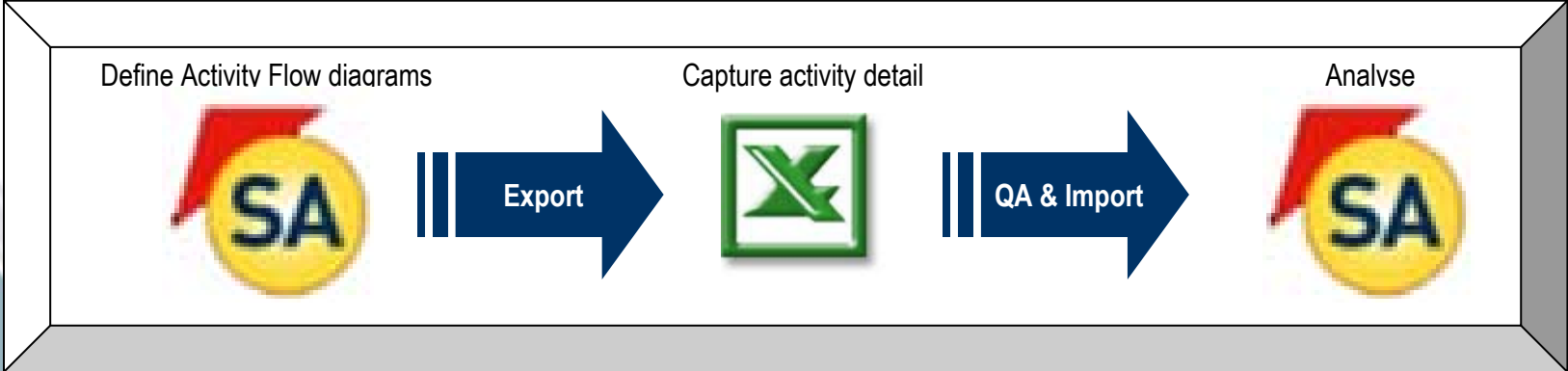
Functional Requirements

Business System

Business Process

	A	B	C	D	H	I	
	Business System	Business Sub-system	Business Module	Business Sub-module	L3 Sub-process	L4 Activity	L4 Activity Description
1							
17	Enterprise System	Quality Management System	Quality Plan System		Manage QA Of Product / Service	Identify Resources	If necessary addition
18	Enterprise System	Quality Management System	Quality Plan System		Manage QA Of Product / Service	Allocate Responsibilities	Responsibilities must
19	Enterprise System	Quality Management System	Quality Plan System		Manage QA Of Product / Service	Describe Activities	quality assurance pla
20	Enterprise System	Quality Management System	Quality Plan System		Manage QA Of Product / Service	Generate QA Plan	Identify and describe
21	Enterprise System	Quality Management System	Quality Plan System		Manage QA Of Product / Service	Implement QA Plan	determine the critical
22	Enterprise System	Quality Management System			Manage QA Of Product / Service	Determine QA Level	The quality assurance
23	Enterprise System	Resource Management System	Financial Management System		Close Systems Engineering Project	Reconcile Project Finances	planning principles
24	Enterprise System	Resource Management System	Financial Management System		Close R&D Project	Reconcile Project Finances	After approval the qu
25	Enterprise System	Resource Management System	Financial Management System		Close T&E Project	Reconcile Project Finances	project team
26	Enterprise System	Resource Management System	Financial Management System	Financial Accounting	Execute Sales Process	Process Payment	determine the critical
27	Enterprise System	Resource Management System	Financial Management System	Financial Accounting	Manage Stock Replacements	Submit Invoice To Industry	The quality assurance
28	Enterprise System	Resource Management System	Financial Management System	Financial Accounting	Manage Stock Replacements	Reimburse Industry	planning principles
29	Enterprise System	Resource Management System	Financial Management System	Financial Accounting	Identify And Analyze (T&E) Business Opportunity	Prepare Quotation For Client	The quality assurance
	Enterprise System	Resource Management System	Financial Management System	Financial Accounting	Execute Damages and Losses Actions	Execute Action	After approval the qu

Approach and Tools



Business Process Model

System Architect Diagram "Manage The Enterprise Business" - Microsoft Internet Explorer

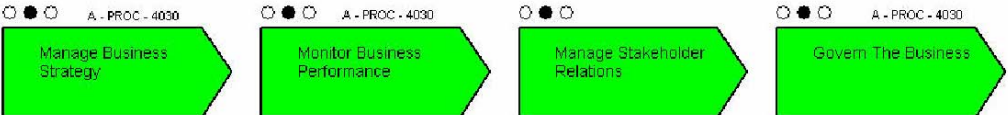
File Edit View Favorites Tools Help

Address <C:\Data\Real IRM\Armcor\Phase 3 - URS\Products\RFI\Armcor\d0001041.htm>

"Manage The Enterprise Business" (B030-L1 Macro Process) diagram

Home Definitions Help Telego Up

Parent Diagram Links



○ ● ○ A - PROC - 4030
 ○ ● ○ A - PROC - 4030
 ○ ● ○
 ○ ● ○ A - PROC - 4030

Manage Business Strategy
Monitor Business Performance
Manage Stakeholder Relations
Govern The Business

SA

Index for diagram

"Manage The Enterprise Business"

Diagram Properties.

- [Govern The Business \(L1 Macro Process\)](#)
- [Manage Business Strategy \(L1 Macro Process\)](#)
- [Manage Stakeholder Relations \(L1 Macro Process\)](#)
- [Monitor Business Performance \(L1 Macro Process\)](#)

Govern The Business (L1 Macro Process)

Child Diagrams:

[Govern The Business \(B040-L2 Process\)](#)

Symbol Properties

Graphic Comment: A-PROC- 4030
Level: - L1 -

Definition Properties

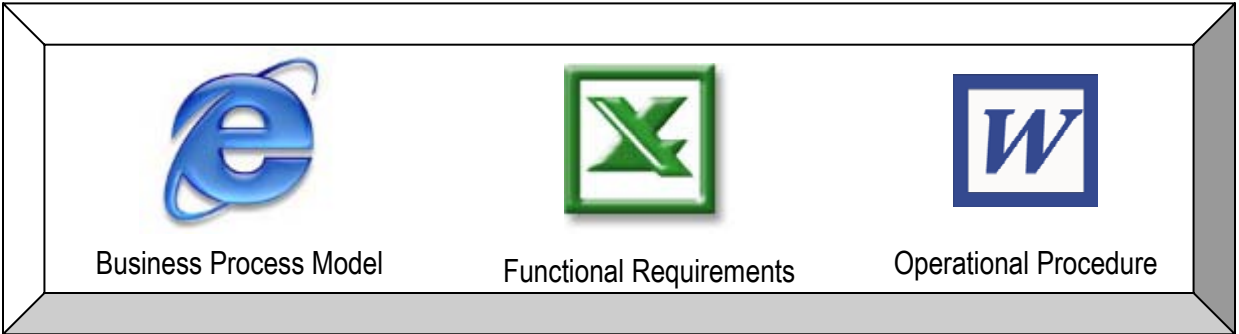
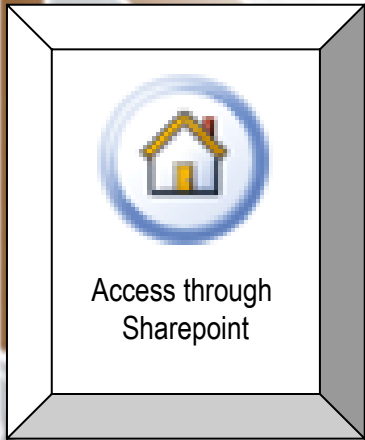
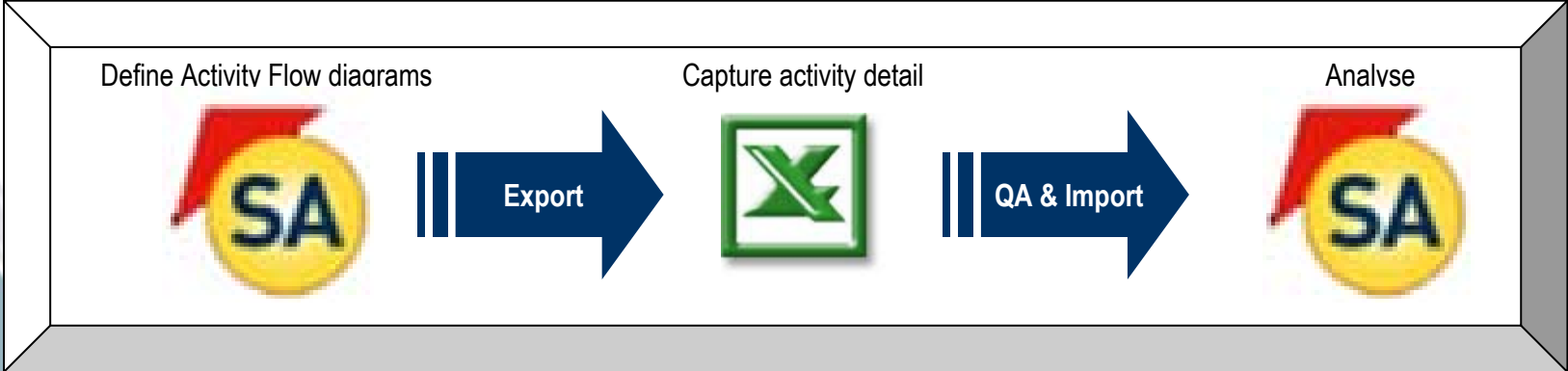
Initial Date: 2/13/2006
Initial Time: 10:54:24
Initial Audit: NOTEBOO
Instantiate?: **False**
Test Time: **After**
Instance Generation: **Serial**
Parallel Flow Condition: **All**

Done My Computer



Business Process Model

Approach and Tools



Presentation Outline

- **Background**
- **Rationale for Enterprise Architecture**
- **EA Approach**
- **EA Capability**
- **User Requirement Specification**
- **Conclusion**

Conclusion

- **Use the right tools for the right audience**
- **Create views per audience**
- **Re-use existing models**
- **Establish an EA capability**
- **Find opportunities to promote EA in the business**
- **EA works!**

“Someday, you are going to wish you had all those models, enterprise wide, horizontally and vertically integrated at excruciating level of detail.

You might as well start working on them...

Anytime this afternoon is probably not too early!”

John Zachman (2001)

