



The Systems Architecture Method

– Recommended Structures and Relationships -

Structure and Level Definitions

In this document we offer our suggestions for the set of structure and relationships that would provide a comprehensive model for your enterprise architecture.

The structures proposed are not fixed either in number or nature or in the number and definition of levels. We propose ten structures, two with secondary, parallel structures containing complementary hierarchical breakdowns.

Each structure is described in a table showing a description of the structure and each level plus the recommended diagram stencil and shapes that might be used. In addition, we suggest the attributes that might be used to describe an individual structure member and also suggest the specialized Visio diagrams that might be used for detailed definition of structure members.

In each table we have drawn a double line at the level which represents the optimum level to form relationships. This recognizes the expected granularity of the structure members at the level – neither too coarse nor too fine-grained.

This line also indicates the level that should be the target of the first-pass building and analysis activity. It is not normally necessary to go any deeper before the structure and its important relationships have been defined, mapped and verified. Having done so, more detailed definition can take place as necessary to complete those structures that figure in immediate development plans.

Follow these links to the tables describing each of the suggested structures:

1. [Objectives and Goals](#)
(Dealing with Strategic Plans, KPIs, Requirements and Needs, Policies and Rules)
2. [Organization](#)
(Dealing with Organizational Structure – groups, departments, divisions – both in departmental and role-based forms)
3. [Business Processes](#)
(Dealing with Workflows, Use Cases and “How to do” definitions)
4. [Applications](#)
(Dealing with Software Inventories, deployment and upgrade plans)
5. [Information and Communications Technology](#)
(Dealing with Platforms and Environments)
6. [Infrastructure and Locations](#)
(Dealing with Buildings, Data Centres, Installations, Networks and Computers)
7. [Business Functions](#)
(Dealing with Word Descriptions and “What do we do” definitions)
8. [Data](#)
(Dealing with Subject Databases, Entities, Attributes and Data Relationships)
9. [Components and Services](#)
(Dealing with Service-oriented Architecture)
10. [Projects and Programs](#)
(Dealing with the Projects and Work Programmes of the Enterprise, Work Packages and Releases, Timelines and Roadmaps)

For some suggestions about Relationships, go [here](#).



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Objectives and Goals

(Dealing with Strategic Plans, KPIs, Requirements and Needs, Policies and Rules)

We offer two, complementary hierarchies. The first is for use in planning and requirements gathering, the second for the recording of policies and rules. A further extension of the meta-model to accommodate Business Value Management is available as a “business scenario” in Enterprise Mode.

 OBJECTIVES AND GOALS			
<p><i>THE OBJECTIVES AND GOALS STRUCTURE describes the strategic and tactical aims of the enterprise in fulfilling its mission. These may be high-level such as “improve customer service” or quite focused such as “Reduce call center waiting time to less than 30 seconds”. In Health and Social Care, examples might be “Reduce Patient Admission Waiting Times to less than 18 weeks” or “Improve Theatre Utilization to greater than 75%” or “Optimize Care Pathways and Patient Journeys to eliminate duplicate activities”.</i></p> <p><i>Objectives and goals are focused on the planning and requirements definition tasks and include definitions of strategic purpose and business targets and indications of relative importance and priority. Objectives and goals impact business processes and are assigned to organizational units for their achievement.</i></p>			
Level	Name	Description	Stencils and Shapes
1	Structure Code	“OGa”	Objectives and Goals Stencil
2	Major Objective	A headline objective of the enterprise supporting a key business strategic aim	Nest or Tree Shape
3	Objective	A clear, describable strategic aim that can be assigned to an organizational unit for its achievement	Nest or Tree Shape
4	Goal	A measurable target that would indicate the achievement of an objective or a significant part thereof.	Nest or Tree Shape or Thin
5	Requirement	A stated, definable factor, facility or condition that will improve the enterprise’s systems, structure or operations.	Thin
6	Need	A specific factor that addresses a shortfall in the enterprise’s operations.	Thin (Offset)
Suggested Member Attributes (apply to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Realization Date • Importance/Priority • Owner 		<ul style="list-style-type: none"> • Brainstorming Diagram • Cause and Effect Diagram • Organization Chart • Basic Diagram • Block Diagram 	



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OBJECTIVES AND GOALS (POLICIES & RULES)

THE OBJECTIVES AND GOALS STRUCTURE (POLICIES & RULES) STRUCTURE describes the parameters and limits within which the enterprise operates. These may be regulatory conditions such as are set by governments and high-level professional and standards bodies or be set by the enterprise on ethical, financial or risk management considerations.

Examples might be global such as “do not trade with countries subject to UN sanctions”, industry focused such as “comply with ISO Standard 12345 for all products in the XX Range” or be enterprise focused such as “No budget may exceed \$x without divisional director approval”. In Health and Social Care, examples might be “All Patient Admissions must be carried out under the supervision of a qualified clinician” or “All patient discharges must be accompanied by a Discharge letter signed by the responsible consultant”.

Policies and Rules are subject to audit and periodic revision and should be assessed in relation to all business processes. Responsibility for their observance rests with nominated organizational units.

Level	Name	Description	Stencils and Shapes
1	Structure Code	“OGb”	Policies and Rules Stencil
2	Policy Group	A summarizing grouping of policies that share common or similar characteristics.	Nest or Tree Shape
3	Policy	A clearly defined principle, which may be ethical, financial, staff-related or legal in nature that governs the enterprise’s operations.	Nest or Tree Shape
4	Rule Set	A defined set of standards, measures or parameters that are used to monitor and control the application of a particular policy. A rule set is typically applied as a whole.	Nest or Tree Shape or Thin
5	Rule	A specific standard, measure or parameter	Thin
6	Rule Expression	A particular formula, statement or procedure used in the application of a rule.	Thin (Offset)
Suggested Member Attributes (apply to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Source • Governance • Absolute/negotiable 		<ul style="list-style-type: none"> • Brainstorming Diagram • Cause and Effect Diagram • Organization Chart • Basic Diagram • Block Diagram 	



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Organization

Organization is often the first structure we try to model. However it is not necessarily as simple as it seems. Everyone knows their boss and their boss’s boss but not necessarily much more. There is often a published organization chart but this is usually out of date.

 ORGANIZATION (DEPARTMENTAL)			
<p><i>THE ORGANIZATION (DEPARTMENTAL) STRUCTURE is concerned with the organizational structure of the organization – groups, departments, divisions – and the interrelationship of these organizational units. Alternatively, the Organizational structure can be role-based.</i></p>			
Level	Name	Description	Stencils and Shapes
1	Structure Code	“ORa”	Organization Stencil
2	Enterprise	An undertaking – Commercial, Governmental, Educational, Charitable or Military - that operates as a coherent whole under an overall management body and coordinated financial control. In Health, it might be a national health service, an independent hospital or hospital group, or at the other extreme, a doctor’s practice.	Nest or Tree Shape
3	Division	A major part of the enterprise focused on the conduct of a business/policy area or major product sector. Typically a division will have a director, sales and profit targets and may be a separate legal entity.	Nest or Tree Shape
4	Organizational Unit	A department or defined, coherent grouping of personnel, with clear responsibilities and authorities. Typically with a manager, headcount, and budget.	Nest or Tree Shape or Thin
5	Workgroup	A grouping of personnel charged with the conduct of particular tasks or projects.	Thin
6	Post	A “slot” in the organizational structure usually occupied by one person. The post will require defined skills and personal attributes. There may be more than one post of the same type within a workgroup.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Manager • Headcount • Budget 		<ul style="list-style-type: none"> • Organization Chart 	



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 ORGANIZATION (ROLE-BASED)			
<p><i>THE ORGANISATION (ROLE-BASED) STRUCTURE is an alternative representation of the organization to reflect the common practice of looking at the organization in terms of who does what and of forming teams for specific purpose. It covers the use of “matrix” organizations.</i></p>			
Level	Name	Description	Stencils and Shapes
1	Structure Code	“ORb”	Roles and Teams Stencil
2	Enterprise	An undertaking – Commercial, Governmental, Educational, Charitable or Military - that operates as a coherent whole under an overall management body and coordinated financial control. In Health, it might be a national health service, an independent hospital or hospital group, or at the other extreme, a doctor’s practice.	Nest or Tree Shape
3	Professional Specialty	The branches of professional practice and endeavor such as engineering, accountancy, law, etc. In health, professional specialties might include nursing, surgery, dentistry, general medicine, and so on.	Nest or Tree Shape
4	Role	The particular activity undertaken by a person within the scope of their professional specialty. Typically a person will be qualified and authorized to carry out this role. Health examples might be pediatric nurse, oncologist, dental hygienist, cardiac surgeon, and so on.	Nest or Tree Shape or Thin
5	Role in Team	The inclusion of a specific role within a team. Typically the team will be composed of a balanced set of roles that enable it to carry out its function.	Thin
6	Job in Team	A specific “slot” in a team for a person with the required role qualifications and attributes. There may be more than one “slot” for a particular role within a team.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Leader • Permanent/Temporary • Virtual/Physical • Co-located/Dispersed 		<ul style="list-style-type: none"> • Organization Chart 	



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Business Processes

(Dealing with Workflows, Use Cases and “How to do” definitions)



BUSINESS PROCESSES

The BUSINESS PROCESSES STRUCTURE contains representation of the procedures and activities carried out by the enterprise. An enterprise may have hundreds of business processes each of which carries out operations needed to achieve the efficient and effective conduct of the enterprise’s business. Business Processes are usually expressed as a sequence of work activities carried out by various organizational units working in a coordinated way. General business example might be ‘Process Customer Orders’, ‘Recruit Staff’, or ‘Prepare Shipping Documentation’. In Health and Social Care typical examples might be “Admit Patient” or “Allocate Staff to Shift Team” or “Conduct Patient Encounter”. At a low level, processes consist of a series of indivisible operations which once started must be completed (or aborted with a return to the initial state), such as ‘Carry out Investigation’ or “Dispense Medication”. These are known as elementary processes. A specific elementary process may be carried out as part of a number of higher level business processes.

Level	Name	Description	Stencils and Shapes
1	Structure Code	“BPa”	Business Processes Stencil
2	Process Group	A grouping of business processes according to a defined set of criteria such as similarity in business area addressed or commonality of activity.	Nest or Tree Shape
3	Process	A process is a specific ordering of work activities across time and space, with a beginning and an end, and clearly defined inputs and outputs.	Nest or Tree Shape
4	Sub-Process	Each Business Process typically has a number of sections or phases perhaps at transition points between workgroups or working environment.	Nest or Tree Shape or Thin
5	Activity	A sub-division of a sub-process into portions that have a common use of workgroup, data provision, technology usage or location.	Thin
6	Elementary Process	The smallest section of a business process with the characteristic that once started it has to be finished or aborted. Equivalent to a Primitive Function (Business Function structure)	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagrams	
<ul style="list-style-type: none"> • Process Type • Manual/Automated • Volume/Period 		<ul style="list-style-type: none"> • Cycle Time • Sequence # • Buffer Time 	<ul style="list-style-type: none"> • Cross-functional Flowchart • BPMN Diagram • Workflow Diagram • IDEF0 Diagram



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		• Basic Flowchart
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Applications

(Dealing with Software Inventories, deployment and upgrade plans)



APPLICATIONS

The APPLICATIONS STRUCTURE describes the enterprise’s inventory of computer and other systems. These would include all operational systems (the “as-is”), those under development and those planned for the future (the “to-be”). They may be component-based and service-oriented or have been built using older methods of construction. In Health and Social Care examples might be “Patient Management System”, “Patient Records System”, “Medication Management System”, and so on.

Level	Name	Description	Stencils and Shapes
1	Structure Code	“APa”	Applications Stencil
2	Application Portfolio	A coherent set of groups of applications that support the operations of a business area typically under the “ownership” of an enterprise, division or major organizational unit.	Nest or Tree Shape
3	Application Group	A grouping of applications based on common criteria such as the processes they support or the functionality they offer.	Nest or Tree Shape
4	Application	A software system or product that addresses a particular business need or requirement or performs a defined kind of analysis or data processing.	Nest or Tree Shape or Thin
5	Module	A self-contained part of an application that may or may not be used or may be separately configurable.	Thin
6	Null	-	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Application Type • Vendor • Release 	<ul style="list-style-type: none"> • Install Date • Mandatory Use • Phase out date 	<ul style="list-style-type: none"> • Basic Flowchart • Organization Chart (for hierarchy) • Conceptual Web Site • UML Model Diagrams • Program Structure 	



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Information & Communications Technology

(Dealing with Platforms and Environments)

 INFORMATION AND COMMUNICATIONS TECHNOLOGY			
<p><i>THE INFORMATION AND COMMUNICATIONS TECHNOLOGY STRUCTURE describes the hardware, software and communications environments and facilities used to construct and operate applications.</i></p>			
Level	Name	Description	Stencils and Shapes
1	Structure Code	"ICa"	Technology Stencil
2	Platform	A coherent set of products, usually proprietary, that provides a full set of functional capability.	Nest or Tree Shape
3	Tier	A sub-division of a software platform into layers such as user interface, user process, business process, services bus, business components and data access.	Nest or Tree Shape
4	Product	A software product or utility that contributes to a technology platform or environment.	Nest or Tree Shape or Thin
5	Options/Release	A version of a product, or component thereof.	Thin
6	Capability	A feature or function of a product release or option.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • ICT Facility Type • Vendor • Release 		<ul style="list-style-type: none"> • Install Date • Mandatory Use • Phase out Date • Basic Diagram • Block Diagram • Organization Chart (for hierarchy) 	



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Infrastructure and Locations

(Dealing with Buildings, Data Centers, Installations, Networks and Computers)

 INFRASTRUCTURE AND LOCATIONS			
<p><i>THE INFRASTRUCTURE AND LOCATIONS STRUCTURE is concerned with the “fixed assets” of the enterprise – locations, buildings, equipment including IT equipment, networks, transportation, etc. and their interrelationships.</i></p>			
Level	Name	Description	Stencils and Shapes
1	Structure Code	“INa”	Maps and Locations and Infrastructure Diagram Stencils
2	City/Town/Building	A geographical place within which a facility is physically located.	Maps, City Icons, Nest or Tree Shape
3	Facility	An installation, such as a data center, that houses a significant computing capability.	Nest or Tree Shape
4	Node	A part of a facility, dedicated to a role within the overall computing capability of the enterprise. The CHF-ADB identifies roles such as central, regional and local nodes.	Nest or Tree Shape or Thin
5	Computer	A computer, or cluster of computers, with its peripheral devices, that performs a defined function such as the processing of an application or system or network activity.	Thin
6	Database	An organized collection of data, stored on a computer, or cluster of computers that supports a business or systems management function.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> Facility Type Node Type Computer Type 	<ul style="list-style-type: none"> Computer Role Database Name Shadowed? 	<ul style="list-style-type: none"> Basic Network Diagram Detailed Network Diagram Enterprise Application 	



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Business Functions

(Dealing with Work descriptions and “What do we do” definitions)

 BUSINESS FUNCTIONS			
<p><i>THE BUSINESS FUNCTIONS STRUCTURE describes “the things an enterprise does” like Marketing, Selling, Product Design, Manufacturing, Financial Management, Personnel Management, and so on. In Health and Social Care, example might be Patient/Client Demographics Maintenance, or Assessment Protocol Maintenance, or Test Results Reporting.</i></p> <p><i>Functions can typically be represented in a non-redundant hierarchy. At the lowest level, functions take the form of “Primitive Functions” – indivisible units of work. These are the self-same objects as “Elementary Processes”, the difference being how they are incorporated into the hierarchy. The Business Function hierarchy is non-redundant and takes the form of a “functional decomposition”. Thus the primitive function appears only once in the hierarchy. The next up level groups a number of primitive functions usually on the basis that they carry out similar operations on similar data. A functional decomposition is constructed on the principles of loose coupling and tight cohesion, principles of good modularization that will be familiar to software engineers.</i></p>			
Level	Name	Description	Stencils and Shapes
1	Structure Code	“BFa”	CHF Business Functions Stencil
2	Functional Group	A top-level summary of the enterprise’s business functions divided into large, self-contained areas.	Nest or Tree Shape
3	Major Function	A grouping of business functions according to their similarity in terms of business operations addressed.	Nest or Tree Shape
4	Function	An operation carried out in fulfilling the enterprise’s business purpose such as producing its products and services and maintaining its operating environment.	Nest or Tree Shape or Thin
5	Sub-Function	Functions typically sub-divide into a number of actions based on criteria such as timing, skill required, location or data usage.	Thin
6	Primitive Function	An indivisible, “atomic” level piece of work that cannot be broken down further and must either be completed, recommenced or aborted. Equivalent to the Elementary Process in the Business Processes structure.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram:	
<ul style="list-style-type: none"> • Mission critical? • Core or secondary? • Mainstream or support? 		<ul style="list-style-type: none"> • Organization Chart (for hierarchy) • Dataflow Diagram • Dataflow Model Diagram • UML Model Diagram 	



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Data

(Dealing with Subject Databases, Entities, Attributes and Data Relationships)

Level	Name	Description	Stencils and Shapes
1	Structure Code	“DAa”	Data Groups Stencil
2	Subject Area	An assembly of data groups that address a common topic, theme or area of interest.	Nest or Tree Shape
3	Data Group	A grouping of data entities that share common characteristics that naturally bring them together. Data groups can be defined by examining the affinity of one entity to another, for example, if we access one entity do we usually want to access the other. If so, we would include them in the same group.	Nest or Tree Shape
4	Data Entity	A real-world “thing” about which we store data.	Nest or Tree Shape or Thin
5	Data Attribute	The items of information that we use to describe a data entity.	Thin
6	Null		Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Normalized? • Primary Key • PK Sequence # • Foreign Key 		<ul style="list-style-type: none"> • FK Sequence # • Data Type • Format • Database Model Diagram (Entity/Relationship) • UML Model Diagram 	



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Components and Services *(Dealing with Service oriented Architecture)*



COMPONENTS AND SERVICES

THE COMPONENTS AND SERVICES STRUCTURE describes

- 1) *Business Components which are encapsulations of business function and data. Examples in Health and Social care might be “Persons and Identities”, or “Personal Affiliations and Entitlements” or “Care Facilities and Schedules”. A business function creates, reads, updates and deletes data. Grouping together all the functions that create and update the same data entities, using a technique such as commutative clustering, defines non-redundant “building blocks” – business components - that may be used to construct systems or applications that in turn support particular business processes. The structure, Business Components, is an example of a “derived structure” – one which is deduced from the relationships between two other structures. This is a powerful tool that exploits hidden value in the enterprise architecture. Components are also important artifacts in modern systems development. By encapsulating functionality and data, software re-use and replace-ability become practical. Further, components offer “services” that may be used in conjunction with the services offered by other components to create a computer application. We are particularly interested in Business Services which are coarse-grained services that provide specific business functionality and data for consumption by business processes. Applications are built from assemblies of components and thus can offer ranges of managed business services. Services exposed using Internet technologies are called “web services”.*
- 2) *Technical or “Non-functional” components that provide services to enable the effective, efficient and secure operation of applications. Examples might be “Identity Management”, or “Authentication and Authorization”, or in a Health context “Electronic Health Record Services” or “Common User Interface Components”.*

Level	Name	Description	Stencils and Shapes
1	Structure Code	“CSa”	Component Service Mapping Stencil
2	Component Group	A grouping of components with common purpose and capability.	Nest or Tree Shape
3	Component	A business or technical component. An encapsulation of functionality and data that can be used as a system building block.	Nest or Tree Shape
4	Service	A capability offered by a component. This may be the provision of defined data or the performance of a defined task.	Nest or Tree Shape or Thin
5	Message	A request that invokes a service or a response that fulfills a service.	Thin
6	Payload	A package of data that contains the information within a message.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> • Encapsulated? • Specified? 	<ul style="list-style-type: none"> • Encoding • Secure? 	<ul style="list-style-type: none"> • Organization Chart (for hierarchy) • UML Model Diagram 	



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• Implemented?		• Program Structure
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Projects and Programs

(Dealing with the projects and work programs of the Enterprise, Work Packages and Releases, Timelines and Roadmaps)



PROJECTS & PROGRAMS

THE PROJECTS & PROGRAMS STRUCTURE describes Projects which are the controlled pieces of work needed to realize an objective or goal. Projects are prioritized in alignment with objectives and goals. Projects are part of larger “programs” which group together and coordinated the multiple activities needed to achieve the objectives. In turn programs are grouped into “portfolios” and “sub-portfolios” which organize programs by common characteristics and management responsibilities.

Level	Name	Description	Stencils and Shapes
1	Structure Code	“PRa”	Projects and Programs Stencil
2	Portfolio	A collection of programs whose governance is carried out by a single authorized person or organizational unit.	Nest or Tree Shape
3	Sub-Portfolio	The sub-division of a large portfolio into manageable blocks of programs that share characteristics such as business area or functional similarity.	Nest or Tree Shape
4	Program	A set of related projects whose realization must be coordinated and planned as a whole in order to achieve a synchronized implementation or sequence of implementations.	Nest or Tree Shape or Thin
5	Phase	The division of a program into time-based tranches of projects which are usually inter-dependent and implementable in the same timeframe.	Thin
6	Project	A project is a temporary endeavor with a defined beginning and end and a set of specified deliverables. It is usually time constrained, and often limited by funding or resources. A project is undertaken to meet specific objectives and goals which in turn recognize the enterprise’s requirements and needs.	Thin (Offset)
Suggested Member Attributes (apply up to five to levels as appropriate)		Detailed Visio Diagram	
<ul style="list-style-type: none"> Start Date End Date Sub-contractor or In-house 	<ul style="list-style-type: none"> Stand-alone Work Package # 	<ul style="list-style-type: none"> Organization Chart (for hierarchy) Gantt Chart Timeline 	



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Some Interesting Relationships and Potential Clusters

The table below suggests some interesting and potentially useful relationships between structure members. These relationships would usually be formed at the recommended levels in the respective structures although this is not essential. However it should be ensured that the degree of granularity is consistent and appropriate. There is a very simple test that would verify this – does the relationship make sense, is it unambiguous and does it encompass the lower level members of the structures too?

The suggested relationships are not exhaustive nor necessarily the optimum relationships for any particular situation or requirement. They are simply the most common.

Since relationships are bi-directional, we show the relationships with directional arrowheads thus (“<>”). You can then read from Structure A to Structure B and vice versa.

We suggest possible useful clusters and what they might mean. These are but ideas however and most users are clear about their needs when they get this far.

Structure A	Relationship	Structure B	Potential Clusters
Objectives and Goals	Responsibility of <> responsible for	Organization	Responsibility Assignment
	Impacts<>impacted by	Business Processes	Process Change
	Enabled by<>enables	Information & Communications Technology	Technology Justification
	Requires <> satisfies	Infrastructure and Locations	Infrastructure Change
	Met by <> meets	Programs and Projects	Program Objectives
Organization	Carries out<>carried out by	Business Processes	Activity Optimization
	User of <> used by	Applications	Application User Group Formation
	Located at<> accommodates	Infrastructure and Locations	Staff Co-location/Network Design
	Responsible for, Accountable for, Consulted about, Involved in	Business Functions	Responsibility Matrix (RACI diagram)
	Can do <> can be done by	Business Function	Organizational Capability Matrix
	“Owns” <> “owned by”	Data	Stewardship Matrix
	Developed by <> develops	Programs and Projects	Activity Assignment
Business Processes	Supported by<>supports	Applications	Application Utilization
	Employs <> employed by	Information & Communications Technology	Process/Technology Utilization
	Happen at<>houses	Infrastructure and Locations	Process/Location Matrix
	Executes<>executed by	Business Functions	Process/Function Performance
	Requires <> required by	Data	Data/Process Utilization
	Uses<>used by	Components and Services	Process/Service Utilization
	Developed by<>develops	Programs and Projects	Process/Developer Matrix



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Applications	1. Supported by <> supports 2. Uses<>used by 3. Exploits<>exploited by	Information & Communications Technology	Application/ Technology Platform Utilization
	Requires <> required by	Infrastructure and Locations	Application Deployment Matrix
	Provides<>provided by	Business Functions	Application Capability Matrix
	Maintains<>maintained by	Data	Data Usage by Application Matrix
	1. Built from<>builds 2. Uses services of<> services used in	Components and Services	Service Usage by Application Matrix
	Developed by<>develops	Programs and Projects	Application/ Developer Matrix

Information & Communications Technology	Installed at <> has	Infrastructure and Locations	Technology Deployment Matrix
	Implemented using <> implements	Components and Services	Component Implementation Matrix
	Can do <> can be done by	Business Function	Technology Capability Matrix
	1. Assesses<>assessed by 2. Implemented by <> implements	Programs and Projects	Technology Implementation Matrix
Infrastructure and Locations	Secures <> secured at	Data	Data Security Clusters
	Developed by <> develops	Programs and Projects	Infrastructure Development
Business Functions	Creates, Reads, Updates, Deletes	Data	Business Components
	Encapsulated in<>encapsulates	Components and Services	Functional Consolidation
	Developed by <> develops	Programs and Projects	Functional Development
Data	Encapsulated in<>encapsulates	Components and Services	Data Consolidation
	Developed by <> develops	Programs and Projects	Data Development
Components and Services	Developed by<>develops	Programs and Projects	Component and Service Development
Programs and Projects	Listed under reverse relationships above	-	-