1. STAGE & SDLC PHASE / DOCUMENTATION CROSS REFERENCE

Systems Development Life Cycle Phase / Documentation	FS		SA&D			Implementation	
	Business Planning	Technical Architecture Definition	Business Architecture Definition	Technical Architecture Definition	Incremental Delivery Planning	Incremental Design and Build	Deployment
Current System Description	C	U	M	U			
Current System Logical Data Model	C	U	M	U			
Required System Description	C	U	M	U			
Requirements Catalogue	C	U	M	U			
Audit, Control & Security Requirements	C	U	M	U			
Constraints List	C	U	M	U			
Process Hierarchy Model	C		M		U		
Process Thread Model	C		M		U		
Use Case Model	C		M		U	U	U
Business Rules	C		M			U	
Actor Catalogue	C		M		U	U	
Business Class Model	C		M			U	U
Implementation Plan (incl. Incremental Delivery Plan)	C				M	U	U
Impact Analysis	C				M		
Cost/Benefit Analysis	C				M		
Business Class Object Sequence Diagrams			C			M/U	
Solution Object Sequence Diagrams			C			M/U	
Component Dependency Model			C		U	U	U
Class/Entity Cross Reference	C		M			U	
Required System Logical Data Model	C	U	M	U		U	
Technical System Architecture		C		M	U	U	U
Technical Requirements/Solutions Mapping		C		M		U	
Technical Application Architecture Overview		C		M		U	
Object Stereotypes/Technologies Mapping		C		M		U	
Technical Class Model				C		U	
Technical Interaction Model				C		U	
Sizing Model		C		M	U		
Data Retention and Archive		C		M	U		
Physical Data Model						C	U
Testing Documentation						C/U	
Implementation Manuals							C/U

Note: C: Create, M: Modify, U: Used/Reference

2. PURPOSE AND SUGGESTED CONTENTS OF DELIVERABLES THAT REQUIRE DOCUMENTATION

2.1 CURRENT SYSTEM DESCRIPTION

Purpose: To document the findings on the investigation of the current system or existing environment.

Contents: Suggested contents include System Overview, Current Implementation Platform, Volumes and Frequencies, Interfaces to Other Systems, Forms and Reports used, Parties involved and Operational procedures

2.2 CURRENT SYSTEM LOGICAL DATA MODEL

Purpose: To document the Logical Data Model (LDM) of the current system.

Contents: The Current System LDM consists of the Current System Logical Data Structure (LDS) and the Entity Description.

2.3 REQUIRED SYSTEM DESCRIPTION

Purpose: To describe the objectives of the required system so as to have an alignment of understanding on the goals of the proposed system between the users and developers.

Contents: Suggested contents include Objectives of the proposed system, Technical Objectives, Organisation units / main users of the proposed system, Major business functions / processes served by the proposed system, Proposed solution for the business, System Interfaces and Components to be Reused.

2.4 REQUIREMENTS CATALOGUE

Purpose: To document the user requirements for the new system.

Contents: The Requirements Catalogue includes Requirement ID, Requirement title, Priority, Functional requirement, Frequency of use, Non-functional requirement and Proposed solution.

2.5 AUDIT, CONTROL & SECURITY REQUIREMENTS

Purpose: To document the audit, system control and security (ACS) requirements.

Contents: Suggested contents include Financial audit requirements, System audit requirements, System controls requirements, System backup and recovery requirements and Disaster recovery requirements

Under each requirement there are four categories. These are allocate a reference number, describe briefly the requirement, state its priority (essential, beneficial if cost justified, subsequent enhancement) and suggest a solution in high level terms.

2.6 CONSTRAINTS LIST

Purpose: To list the constraints on the design and implementation of the proposed system and the business organisation and policy.

Contents: There are different types of constraints relating to the use of equipment, interface with other systems, manual and clerical procedures, input and output, operational and business organisation and policy.

Details to be recorded may include Use of equipment, Interface with other systems, Manual and clerical procedures, Input and output, Operational constraints and Business organization and policy.

2.7 PROCESS HIERARCHY MODEL

Purpose: To help determine the scope of the project by providing a visual focus for Business Process Model (BPM) with respect to the business processes.

Contents: Suggested contents include Process Hierarchy Diagram, Business Process and Main Process Descriptions.

2.8 PROCESS THREAD MODEL

Purpose: To model the flow or thread of Elementary Business Processes (EBPs) within a Main Process as part of Business Process Modelling.

Contents: The Process Thread Model consists of the Process Thread Diagrams (PTD) and the description of the Events and EBPs in each diagram.

2.9 USE CASE MODEL

Purpose: To analyse how a system should behave, gather requirements from the user point of view, describes interaction between the system and the actor.

Contents: The Use Case Model consists of the Use Case Diagram and descriptions of the Use Cases in each Diagram.

2.10 BUSINESS RULES

Purpose: To document the functional requirements in the Use Cases that are too complex and specific to be stated in the Use Case description.

Contents: The information to be captured for each business rule include Business rule reference ID, Name of the Business Rule and Description of the Business Rule

2.11 ACTOR CATALOGUE

Purpose: To describe the significant actor roles within the organisational area that is being analysed.

Contents: The information to be captured for each actor includes actor name and description.

2.12 BUSINESS CLASS MODEL

Purpose: To define the basic Business Classes and their relations that will be needed to realise the required functionality.

Contents: Business Class Model includes Business Class Diagram and Business Class Description.

2.13 IMPLEMENTATION PLAN

Purpose: To list the tasks required for implementing the application system, together with the resources required and the schedule.

Contents: The Implementation Plan should include Proposed Implementation Strategy, Incremental Delivery Plan, Schedule for Implementation, Outline Test Plan, Contingency Plan, Conversion Plan, Resources required to carry out the tasks and Contingency required in the case of critical applications.

2.14 IMPACT ANALYSIS

Purpose: To explain the effects of the introduction of the proposed system on the user environment.

Contents: The result of impact analysis should include effect on organisation and staffing levels, significant changes in user operating procedures, implementation consideration such as training, effects of inexperienced staff on service level, savings on replaced equipment and associated costs.

2.15 COST / BENEFIT ANALYSIS

Purpose: To document the findings on the investigation of the current system or existing environment.

Contents: Estimates of the development costs, operating costs, conversion cost (if any), training cost, site preparation cost, hardware and software cost, tangible benefits including reduced costs and intangible benefits.

2.16   BUSINESS CLASS OBJECT SEQUENCE DIAGRAMS

Purpose: To model the dynamic behaviour of the Business Classes.

Contents: A Business Class Object Sequence Diagram consists of the Process Logic, System Border, Interface/Business Classes and Operations.

2.17   COMPONENT DEPENDENCY MODEL

Purpose: To show on a high level, the business components that will make up the system as well as the use of services between the components.

Contents: Component Dependency Model includes Component Dependency Diagram and Component Services Description.

2.18   SOLUTION OBJECT SEQUENCE DIAGRAMS

Purpose: To define the operations and interactions required for the solution to be built to support the behaviour as defined in the Use Cases.

Contents: A Solution Object Sequence Diagram (OSD) for each Use Case consists of the Process Logic, System Border, Process Controller, Interface Classes of Business Components, Operations and Probes.

2.19 CLASS/ENTITY CROSS REFERENCE

Purpose: To describe the mapping of the Business Classes to Entities of the Required System Logical Data Model.

Contents: The Class/Entity Cross Reference contains the Business Class and Entity.

2.20 REQUIRED SYSTEM LOGICAL DATA MODEL

Purpose: To document the Logical Data Model (LDM) of the required system.

Contents: The Required System LDM consists of the Required System Logical Data Structure (LDS) and Entity Description.

Format of the Required System LDM remains the same as the Current System LDM as depicted in the Business Planning stage. The only difference is that it is now specifying the data requirements of the Required System.

2.21 TECHNICAL SYSTEM ARCHITECTURE

Purpose: To document the proposed technical environment for development, testing and production.

Contents: Suggested contents include Hardware Requirements, Communication Facilities, Software Requirements, Middleware Requirements / Facilities, System Facilities, Development Facilities and Others.

2.22 TECHNICAL REQUIREMENTS/SOLUTIONS MAPPING

Purpose: To document the technical requirements that should be fulfilled by the technical architecture and identify the corresponding solutions provided by system architecture and application architecture.

Contents: Suggested contents includes Requirement, Priority, Description, Solution provided by System Architecture, Solution provided by Application Architecture,

2.23 TECHNICAL APPLICATION ARCHITECTURE OVERVIEW

Purpose: To provide a high level overview on the Application Architecture.

Contents: A high level diagram showing the Application Architecture.

2.24 OBJECT STEREOTYPES/TECHNOLOGIES MAPPING

Purpose: To define the stereotypes together with the preferred implementation techniques.

Contents: A complete list of all stereotypes that are used in the architecture is produced. For each stereotype, document the preferred technique and the description.

2.25 TECHNICAL CLASS MODEL

Purpose: To define the technical classes and patterns that will support the application.

Contents: Technical Class Model composed of Technical Class Descriptions and Technical Class Diagrams. Each technical class is described with its high-level responsibilities, intended functionality and purpose, together with attributes and operations it provides. Technical Class Diagrams show the relationships between technical classes.

2.26 TECHNICAL INTERACTION MODEL

Purpose: Purposes include:

- Document the interaction between layers in the model and the stereotypes involved.
- Document the use of technical services from the application.
- Document the interactions between the inner classes of a technical component in supporting a technical service.
- Document technical patterns.

Contents: Object Sequence Diagrams (OSDs) showing the interactions of technical classes and/or stereotypes together with descriptions. Also it's detailing the technical services which provided by the application architecture.

2.27 SIZING MODEL

Purpose: To document the sizing information of data storage, network workload and system throughput of the required system to form a basis for deriving the configuration of the system for costing purposes.

Contents: Suggested contents include data storage, network loading and system throughput.

2.28 DATA RETENTION AND ARCHIVE

Purpose: To record the data retention and archiving requirements.

Contents: Suggested details to be recorded include data to be retained, retention policy, archive method and frequency of archiving.

2.29 PHYSICAL DATA MODEL

Purpose: To describe the physical data structure using the data definition syntax of the target database management system.

Contents: The Physical Data Model consists of Physical Data Structure and Physical Data Structure Specification. The format of Physical Data Structure is similar to the Logical Data Model. except for those refinements made. The Physical Data Structure Specification is similar to Entity Description except that the specification follows that of the target Database Management System (DBMS).

2.30   TESTING DOCUMENTATION

Purpose: To describe the test scenarios, test conditions and test cycles that must be performed to ensure that integration, testing and acceptance testing follow a precise schedule and that the system is thoroughly tested before moving into production.

Contents: Documents include:

- Test Plan (for each type of testing performed, e.g. unit, integration, system and acceptance testing etc.),

- Test Specification (to specify the test procedures, test cases, test data and test environment etc.),

- Test Incident Report (to document any event that occurs during the testing process which requires investigation),

- Test Progress Report (to report periodically on the progress of the testing),

- Test Summary Report (to summarize the results of the testing activities for future test planning references).

2.31   IMPLEMENTATION MANUALS

Purpose: To document the manuals that are needed to use the system correctly and for the use of future maintenance.

Contents: Documents include:

- Application Users Manual (to provide the end users with detailed instruction on working with the system implemented),

- Computer Operating Procedure Manual (to provide information and operating instructions related to the operating of the computer system),

- Application Operations Manual (to document in detail the instructions of all the work to be performed by the computer operation staff in running the application system),

- Data Manual (documents all computer data captured, processed or produced by the system),

- Program Manual (contains the detailed program specification of all programs used within the application system),

- System Manual (to provide an overview of the system by listing out in brief the programs, data files, equipment, clerical procedure, computer operation procedure, etc.).