SUMMARY OF DELIVERABLES TO BE PRODUCED IN EACH STAGE

RAD Tasks → / Deliverables ↓	Research Current Situation	Define Requirements	Finalize Requirements	Produce Detailed System Area Model	Develop Outline System Design	Refine System Design	Prepare Implementation Strategies	Finalize System Design	Obtain Approval for Construction	Prepare for Rapid Construction	Construct System	Generate Test Data and System Documents	Prepare for Transition	Verify System Construction	Conduct User Training	Perform Data Conversion	Install Production System	Accept System Installation
Requirements Planning				*User Design*						*Rapid Construction*					*Transition*			
ISSS &/or FS Reports	R	R	R	R	R	R		R										
Current Environment Documents	R																	
External Business & Technology Constraints		R	R	R	R	R		R										
Miscellaneous Business Documents	R	R	R															
Existing H/W & S/W Documentation		R	R	R	R	R		R										
Budget & Resources Forecast			R															
Miscellaneous System Documents	R																	
1 Audit, Control & Security Requirements	C	M	M	M		M		R,M	R			R,X						
2 Business Process Diagram	C	M	M	M	R				R			R,X						
3 Business Process Description	C	M	M	M	R				R			R,X						
4 Constraints List		C,M	M	M		M		M	R			R,X						
5 Converted Data																C,M		
6 Cost/Benefit Analysis			C,R					M	R									
7 Current System Description	C			M														
8 Data Conversion Routine												C,M						
9 Data Retention and Archive					C		M			M		R,X						
10 Discussion Notes	C	C	C	C	C	C	C	C	C									
11 Entity Description	C	M	M	M		R,M												
12 Entity State Diagram				C,M														
13 Event Dependency Diagram					C	M												
14 Function Definition					C	R,M		M	R		R	R,X						
15 Function List			C	R														
16 Function Structure Diagram			C		M	M		M	R		R	R,X						
17 Function/Entity Cross Reference					C					R,X								
18 Impact Analysis					C		M	M	R									
19 Implementation Plan			C		M		M	M	R				M					
20 Installed System Components/Production System																	C	M
21 Logical Data Structure	C	M	M	M	M	R,M												
22 Open Issues List	C	M	M		M	M	M	M					R					
23 Physical Data Model					C			M		M	R	R,X						
24 Process/Entity Cross Reference	C	M	R	M		R,X												
25 Program											C,M			M				
26 Program Specification											C	R,X						
27 Prototype					C			M										
28 Prototype Specification					C	M		M										
29 Required System Description				C					R			R,X						
30 Requirements Catalogue	C	M	M	M														
31 Reusable Business Model Components	C			R														
32 Reusable Design Components	C				R													
33 Screen/Report Layout					C	M		M	R			R,X						
34 Sizing Model			C				M	M	R									
35 System Documents / Implementation Documents												C	R	R,M	M			
36 Technical System Architecture			C				M	M	R	M		R,X						
37 Testing Documents										C		M		R,M		R		
38 Trained Users															C			
39 Trained Operations Staff																		C
40 Training Materials													C		R			
41 Training Plan													C		R			
42 User Catalogue	C	M	M	M	R	M			R									
43 User Role/Function Cross Reference				C,R	R			R	R									

C=Created, M=Modified, R=Referenced/Used, X=Not used thereafter

2. PURPOSE AND SUGGESTED CONTENTS OF DELIVERABLES THAT REQUIRE DOCUMENTATION

2.1 Audit, Control & Security (ACS) Requirements

Purpose: To document the audit, system control and security requirements of the proposed system.

Contents: There are various types of ACS requirements, namely financial audit, system audit, system controls, system backup & recovery and disaster recovery. For each requirement, suggested contents include reference number, name, description, priority and proposed solution.

2.2 Business Process Description

Purpose: To provide a description of the purpose and detailed activities within a business process or elementary business process.

Contents: Suggested contents include process ID, name and description.

2.3 Business Process Diagram / Process Thread Diagram

Purpose: To model the flow or thread of Elementary Business Processes (consisting of a consecutive series of activities) within a Business Process.

Contents: The Business Process Diagram contains mainly Business Events, Business Processes, transitions between Business Processes and Result Business Events. It could also show Process Breaks and Processes that occur iteratively or concurrently with each other, if any.

2.4 Constraints List

Purpose: To list the constraints on (a) the design and implementation of the proposed system and (b) the business organization and policy.

Contents: Suggested contents include constraints on use of equipment, interface with other systems, manual and clerical procedures, input & output and operational deadlines.

2.5 Cost/Benefit Analysis

Purpose: To estimate the cost incurred to develop the system and the benefits envisaged.

Contents: Costs/benefits to be estimated include development costs, operating costs, conversion costs (if any), training cost, site preparation cost, hardware and software cost, tangible benefits including reduced costs and intangible benefits.

2.6 Current System Description

Purpose: To document the current system or existing environment.

Contents: For each computer system, document name, short description, implementation platform (hardware, software used), assessment of the system (regarding its usefulness and usability, both from a technical and user point of view) and interfaces to other systems (to describe existing computer systems and manual operations concerned).

For manual operations, document the forms & reports used, parties involved and operational procedures as well.

2.7 Data Retention and Archive

Purpose: To record the data retention and archiving requirements.

Contents: Suggested contents include data to be retained, retention policy (such as time, record status, etc.), archive method and frequency of archiving.

2.8 Discussion Notes

Purpose: To record issues discussed during Joint Requirements Planning (JRP) and Joint Application Design (JAD) workshops.

Contents: Suggested contents include venue the workshop is held, date/time the workshop is held, workshop participants, issues raised, decision made during the workshop and responsible party for open issues (also documented in the open issue list).

2.9 Entity Description

Purpose: To record details of the entities represented in the Logical Data Structure.

Contents: Suggested contents include entity name, attributes, associated data format, key definition, record size, minimum/average/maximum occurrence and growth rate.

2.10 Entity State Diagram

	Purpose:	To record entities' life cycles.
	Contents:	The diagram should consist of entity states and related elementary processes.

2.11   Event Dependency Diagram

	Purpose:	To represent the behavior of the business under a given set of circumstances. It relates happenings (events) to the business response (processes).
	Contents:	The Event Dependency Diagram consists of mainly significant events in the business, the business processes they trigger, and the relationship between processes.

2.12   Function Definition

	Purpose:	To describe the system functions to be provided by the system.
	Contents:	Suggested contents include ID, name, description, mode of operation, frequency of use and related business process.

2.13   Function List

	Purpose:	To list the functions to be supported in the proposed system.
	Contents:	Suggested contents include ID, name and description.

2.14   Function/Entity Cross Reference

	Purpose:	To summarize how entities are acted upon by the system functions to find out if there are any missing entities or system functions and any other abnormalities.
	Contents:	A matrix illustrating the nature of action (create, modify, delete and read) of a function upon an entity.

2.15   Function Structure Diagram

	Purpose:	To provide an overview of the functions to be supported by the proposed system.
	Contents:	Functions to be supported in the proposed system in the form of a function decomposition diagram.

2.16   Impact Analysis

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

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

2.17   Implementation Plan

Purpose: To list the tasks required to develop and implement the application, the resources required and the schedule.

Contents: The implementation plan mainly contains the tasks required to develop, implement and test the application; other tasks required (such as data conversion, user training, site preparation, etc.) to ensure smooth transition to the proposed system; resources required to carry out the tasks; schedule for implementation; proposed implementation strategy; outline implementation procedure; and contingency required in the case of critical applications.

2.18   Logical Data Structure

Purpose: To document diagrammatically the initial representation of the data of the required system and the relationship between these data.

Contents: This product is a diagrammatic representation of the entities and relationships between the entities for the area defined in the project scope.

2.19   Open Issue List

Purpose: To record design issues arising during the Requirements Planning and User Design stages.

Contents: Suggested contents include date the issue is identified, person who is responsible for the issue, date by which the issue should be resolved, description of the issue, related business area or function, solution or circumvention and solution/circumvention suggested by whom & when.

2.20   Physical Data Model

Purpose: To describe the data structure and tables as perceived in the target database management system.

Contents: The Physical Data Model consists of the Physical Data Structure and the Physical Data Structure Specification. The Physical Data Structure and Physical Data Structure Specification is similar to the Logical Data Structure and Entity Description respectively, except that the specification follows that of the target DBMS.

2.21   Process/Entity Cross Reference

Purpose: To summarize how entities are acted upon by the business processes to find out if there are any missing entities or processes and any other abnormalities.

Contents: A matrix illustrating the nature of the action (create, modify, delete and read) of a process upon an entity.

2.22   Program Specification

Purpose: To describe the objective of the program and the processing logic required to achieve the objective.

Contents: Suggested contents include program ID, mode of operation, program name, objective/description, programming environment, amendment history, file usage/data views/database access, screen/window navigation, input parameters, processing logic, external reference, program limits, validation rules & exception handling, dialogue actions and messages used & when it would be displayed.

For GUI environments, event handling (button events, pull-down menu events, tool bar events etc.) should also be specified. For reporting procedures, selection criteria, sorting sequence, layout requirements, grouping requirements and when should the report have a logical page break etc. should be specified.

2.23   Prototype Specification

Purpose: To describe the objectives of the prototype, the functions included in the prototype, types of prototypes adopted, users involved and the specification required for building the prototype.

Contents: The prototype specification consists of specifications on the menu & screen navigation, and specifications for the programmers to build prototype. Program specifications might be necessary if a working prototype is to be built.

2.24   Required System Description

Purpose: To describe the scope and objectives of the required system in order to have an alignment of understanding on the goals of the system between the users and developers.

Contents: The overall objectives of the system in terms of the strategic business opportunities, goals, problems and critical success factors that are relevant to the proposed system. Processes and entities that the system will support should also be described. Other information such as business area served, services provided, users of the system as well as interfaces with other computer/manual systems, if any, should also be documented.

2.25   Requirements Catalogue

Purpose: To document user requirements.

Contents: Suggested contents include reference number, name, description (functional, non-functional), priority, frequency of use and proposed solution (optional).

2.26   Screen/Report Layout

Purpose: To describe the screen and report layouts associated with the proposed system.

Contents: Layout of the screen/report in the form of a template, each screen or report must have a unique identifier.

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   System Documents / Implementation Documents

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.).

2.29 Technical System Architecture

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

Contents: Computer equipment and system facilities required for development and production including hardware requirements, communication requirements, software requirements, system facilities, development facilities and other site specific requirements.

2.30 Testing Documents

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   User Catalogue

Purpose: To record and describe the users of the required system and the roles and responsibilities associated with them.

Contents: Suggested contents include job titles of the users and their responsibilities.

2.32   User Role/Function Cross Reference

Purpose: To identify and show the involvement of the user roles with system functions to derive the access rights for the proposed system.

Contents: A cross reference or matrix showing what functions are to be used by different user roles.