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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report consolidates the Structured Analysis and Structured Design for the Logistic Support Analysis (LSA) Tasks. Included are the Data Flow Diagrams (DFDs) for the LSA Subtask 101.2.1, "Early LSA Strategy", with the corresponding descriptions of the processes, data flows, data stores, and external entities identified on each DFD. The DFDs are further developed into procedures which identifies how to use the data to carry out the processes and accomplish the LSA Subtask. Venture Evaluation Review Technique (VERT) Batch Input files are also provided to assist, as tools, giving both technical and managerial aspects of a task.			
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STRUCTURED ANALYSIS/DESIGN

LSA TASK 101

**EARLY LOGISTIC SUPPORT
ANALYSIS STRATEGY**

**SUBTASK 101.2.1
DEVELOP EARLY LSA STRATEGY**

APJ 966-201



APJ 966-201

STRUCTURED ANALYSIS/DESIGN

**LSA TASK 101
EARLY LOGISTIC SUPPORT ANALYSIS STRATEGY**

**SUBTASK 101.2.1
DEVELOP EARLY LSA STRATEGY**

under

CONTRACT DAAA21-86-D-0025

for

**HQ US AMCCOM
INTEGRATED LOGISTIC SUPPORT OFFICE
AMSMC-LSP
ROCK ISLAND, IL**

by

AMERICAN POWER JET COMPANY

RIDGEFIELD, NJ

FALLS CHURCH, VA

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FOREWORD

APJ, under contract to HQs, AMCCOM, has initiated the automation of the LSA Tasks (MIL-STD-1388-1) and the assessment of the ILS elements (AR 700-127). A major goal is to unify military and contractor approach to the performance of ILS and LSA.

Detailed to meet all requirements of ILS and LSA, the automated process will continue to provide full flexibility in selecting tasks and elements to be addressed at each life cycle stage. At the same time it will insure that the application of each task element is consistent with prescribed Army policies and procedures.

This report consolidates the Structured Analysis and Structured Design under one cover for the respective LSA Tasks. Structured Analysis provides a logical model of the method to perform an LSA Task. This logical model facilitates the development of a Structured Design that provides the detailed procedures to perform the analysis. Both the logical model and detailed procedures are used to develop the application software programs which will be provided to Government and contractor personnel to assist in the performance of the LSA Task.

Included in this report are the Data Flow Diagrams (DFDs) for LSA Subtask 101, "Early LSA Strategy" and the corresponding descriptions of the processes, data flows, data stores, and external entities identified on each DFD (Annex B). In addition the DFDs are further developed into step-by-step procedures (Annex C) which identifies how to use the data to carry out the processes which ultimately lead to accomplishing the LSA Subtask.

To assist managers in planning and controlling this task, Venture Evaluation Review Technique (VERT) Batch Input Files are provided (Annex D). These VERT tools provide government agencies with complete packages to give contractors that cover both technical and managerial aspects of a task. This approach establishes a standardized form of communication and management between contractors performing the task and government personnel reviewing the task.

To view this work in context, Annex E of this report also presents a brief overview of Structured Analysis and its place in the overall systems development process. The overview and certain portions of the introductory text are repeated verbatim in every report in this series so that each report is free standing.

In this report, Annex F has been developed to indicate the potential "Help" screens that can be placed into the on-line program. It is not meant to be all inclusive, merely indicative as to the type of guide that could be added for the user.

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INTRODUCTION

PURPOSE

The purpose of this report series is to present the results of the APJ Structured Analysis/Design under Contract DAAA21-86-D-0025 for coordination with the AMCCOM Program Manager prior to in-depth programming of ILS and LSA functions and processes. LSA Task 101 "Early Logistic Support Analysis Strategy", (LSA Subtask 101.2.1, "Develop Early LSA Strategy") is addressed in this report.

BACKGROUND

The Department of the Army has a requirement for management control over contractor and Government agency response to the requirements of AR 700-127, "Integrated Logistic Support", and MIL-STD-1388-1, "Logistic Support Analysis". HQs AMCCOM has initiated action to structure each of the LSA tasks, the assessment of each ILS element, the form of the results, and the detailed processes to insure consistency with current Army policies, procedures, and techniques.

This approach (undertaken by AMCCOM and APJ) will insure uniformity in efforts and products, reproducibility of analyses, and a well-defined structure which can be coordinated among all participants in the logistic process to arrive at common understanding and procedures.

SCOPE

This report summarizes the results of the Structured Analysis of the identification of LSA Task 101, "Early Logistic Support Analysis Strategy", LSA Subtask 101.2.1, "Develop Early LSA Strategy", and presents the associated Data Flow Diagrams (DFDs) developed from the Structured Analysis and the corresponding procedures developed in the Structured Design. The portions of the Data Dictionary relating to the DFDs for this LSA Subtask includes the labels, names, descriptions, processes, data flows, data stores, and external entities. (The Data Dictionary is a "living document" that evolves through the analysis and design process).

The Data Dictionaries developed for each of the individual LSA Subtasks are integrated into a Master Data Dictionary. Integration of the individual Data Dictionary involves the combination of similar Data Flows, Data Stores, and External Entities.

LSA TASK 101 DESCRIPTION

Two basic tasks are required hereinunder: (1) to prepare a proposed LSA strategy for use early in the acquisition cycle, and (2) to provide for the update of the strategy when required, based on analysis results, program schedule modifications, and program decisions. The former (1), is accomplished via Processes 101.2.1.1 - 101.2.1.3 with associated sub-Processes. The latter (2), is accomplished via Processes 101.2.1.4 and 101.2.1.5.

The development of the LSA strategy requires preparation of the potential supportability objectives for new system/equipment and identification of the selected LSA Tasks and Subtasks to be performed early in the acquisition program. A rationale must accompany the selected LSA Tasks and Subtasks. There is also a requirement to estimate the cost and identify the proposed organization to perform each Task and Subtask.

The outputs of LSA Task 101 include the LSA strategy outlining the proposed supportability objectives for the new system/equipment and the resulting LSA Tasks and Subtasks to be performed early in the acquisition program and in subsequent LSA strategy updates. A copy of Task definitions from MIL-STD-1388-1A is included as Annex A.

APPROACH

The APJ approach to Structured Analysis and Structured Design of an LSA Subtask is:

1. Scope the Subtask defined in MIL-STD-1388-1A with the overall task and determine its relationship with other LSA Tasks.
2. Review all pertinent documentation (e.g., ARs, MIL-STDs, etc.) applicable to the specific topic.
3. Prepare the Top Level DFDs in context of the Subtask, and develop lower level DFDs to further quantify any complex process identified in the top level DFD.

4. Complete the Data Dictionary portion of the Analysis by describing all processes, data flows, data stores and external entities.

5. Apply staff experience in logistic support analysis to assure that the topic has been extensively addressed.

6. From the completed DFDs, prepare the step-by-step procedures that form the structured design.

7. Review Data Item Description and other applicable materiel to develop output reports.

8. If required, revise DFDs and Data Dictionary based on preparation of detailed procedures.

9. Validate results in discussions with Army activities and personnel directly involved in the applicable or related LSA tasks.

NOTE: Structured Analysis and preparation of Data Flow Diagrams (DFDs) was further assisted by the application of Structured Analysis software. Licensed by Index Technology Corporation, Excelerator provides for automated tracking of names, labels, descriptions, multiple levels of detail in the data flow diagrams, and industry standards in symbols and diagramming practices.

LSA SUBTASK 101 - EARLY LSA STRATEGY

The Data Flow Diagram is a tool that shows the flow of data, (i.e., data flows from sources) and is processed by activities to produce intermediate or final products.

The DFD provides a useful and meaningful partitioning of a system from the viewpoint of identification and separation of all functions, actions, or processes. This permits each item to be introduced, changed, added, or deleted with minimal disruption of the overall program (i.e., it emphasizes the underlying concept of modularity and identifiable transformations of data into actionable products.)

A series of six (6) DFDs have been developed to structure the LSA subtask relative to operations and other support functions:

1. 101.2.1 LSA Strategy Development - Overview
2. 101.2.1.1A Prepare LSA Objectives

3. 101.2.1.1A5B Identify and Publish Objectives
4. 101.2.1.2A Early LSA Strategy
5. 101.2.1.3A Identify Supportability Factors
6. 101.2.1.4A Finalize Strategy

Each DFD is keyed to the specific task through the identification number assigned in the lower right hand box. The Alpha codes indicate the level of indenture or explosion below the top level, i.e., :

```

Top Level.....LSA DFD 101.2.1
  First Indenture.....LSA DFD 101.2.1.1A
    Second Indenture.....LSA DFD 101.2.1.1A5B

```

Each DFD makes reference to the basic LSA Task it addresses, as well as the level of indenture (explosion) of the DFD. For example, the first or top level DFD, "101.2.1", refers to the section in MIL-STD-1388-1A which describes the review items. One of the processes (bubbles) on the top level diagram (101.2.1.1) is expanded and identified a "101.2.1.1A".

Four standard symbols are used in the design of a DFD (see Annex E - Figure 1).

A copy of each DFD is presented in Annex B, accompanied by the Data Dictionary process elements. Each entry made in the DFDs has a corresponding entry in the Data Dictionary.

This presents only those Data Dictionary entries necessary for the coordination of the overall concept and details of the processes. To facilitate review of the diagrams, data flow identifications, process, and data store descriptions are provided. As noted above, they will continue to evolve and be expanded in the System Design phase.

VERT DIAGRAMS

The Venture Evaluation Review Technique (VERT) was developed as a network analysis technique to facilitate management decision-making. It allows systematic planning and control of programs and enables managers to find solutions to real life managerial problems. The VERT Diagrams and Input Files for this task can be found in Annex D. In order to understand how these Input Files were developed, a brief discussion of the methodology used is provided. The same explanation is repeated verbatim in every report.

ANNEX A

**LSA TASK 101 DESCRIPTION
EARLY LSA STRATEGY**

ANNEX A
LSA TASK 101
DEVELOPMENT OF AN EARLY
LOGISTIC SUPPORT ANALYSIS STRATEGY*

101.1 PURPOSE. To develop a proposed LSA program strategy for use early in an acquisition program, and to identify the LSA tasks and subtasks which provide the best return on investment.

101.2 TASK DESCRIPTION.

101.2.1 Prepare potential supportability objectives for the new system/equipment and identify proposed LSA tasks and subtasks to be performed early in the acquisition program. Estimate the cost to perform each subtask and identify proposed organizations to perform each task and subtask. The proposed supportability objectives and analysis tasks and subtasks shall be based on the following factors:

a. The probable design, maintenance concept, and operational approaches for the new system/equipment and gross estimates of the reliability and maintainability (R&M), O&S costs, logistic support resources, and readiness characteristics of each design and operational approach.

b. The availability, accuracy, and relevance of readiness, O&S cost, and logistic support resource data required to perform the proposed LSA tasks and subtasks.

c. The potential design impact of performing the LSA tasks and subtasks.

d. The cost effectiveness of each task and subtask given projected cost and schedule constraints.

101.2.2 Update the LSA strategy as required based on analysis results, program modifications, and program decisions.

* Abstracted verbatim from MIL-STD-1388-1A, 11 April 1983, pp 10-11

101.3 TASK INPUT

101.3.1 Expected mission and functional requirements for the new system/equipment.

101.3.2 Expected program funding and schedule constraints and other known key resource constraints that would impact support of the system/equipment such as projected deficits in numbers or skills of available personnel, limited priorities on strategic materiel, etc.

101.3.3 Data bases available from the requiring authority for use in LSA tasks.

101.3.4 Delivery identification of any data item required.

101.3.5 Previously conducted DOD or Service mission area and system/equipment analyses which are pertinent to the new system/equipment.

101.4 TASK OUTPUT

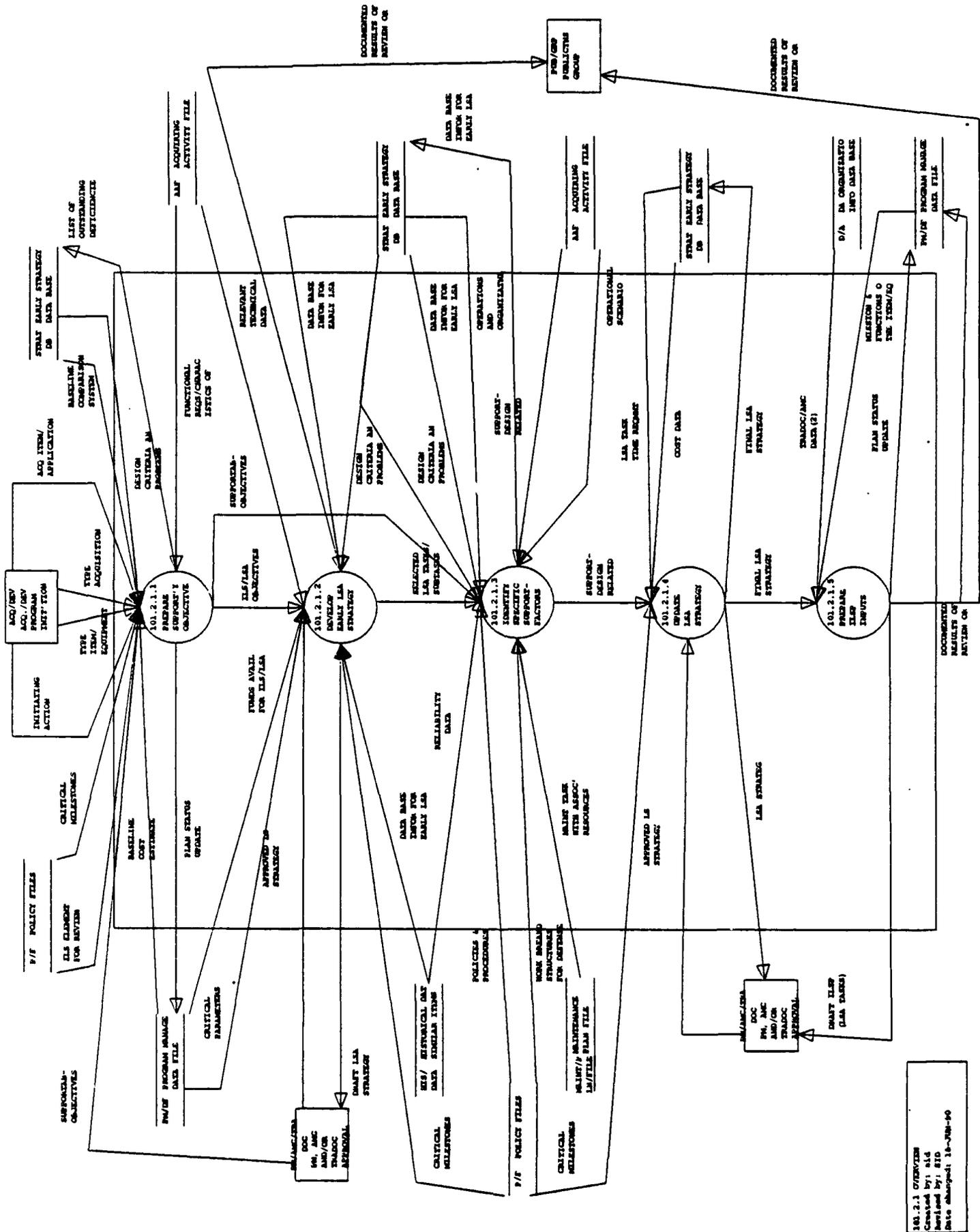
101.4.1 An LSA strategy outlining proposed supportability objectives for the new system/equipment and proposed LSA tasks and subtasks to be performed early in the acquisition program which provide the best return on investment (101.2.1)

101.4.2 LSA strategy updates as applicable (101.2.2)

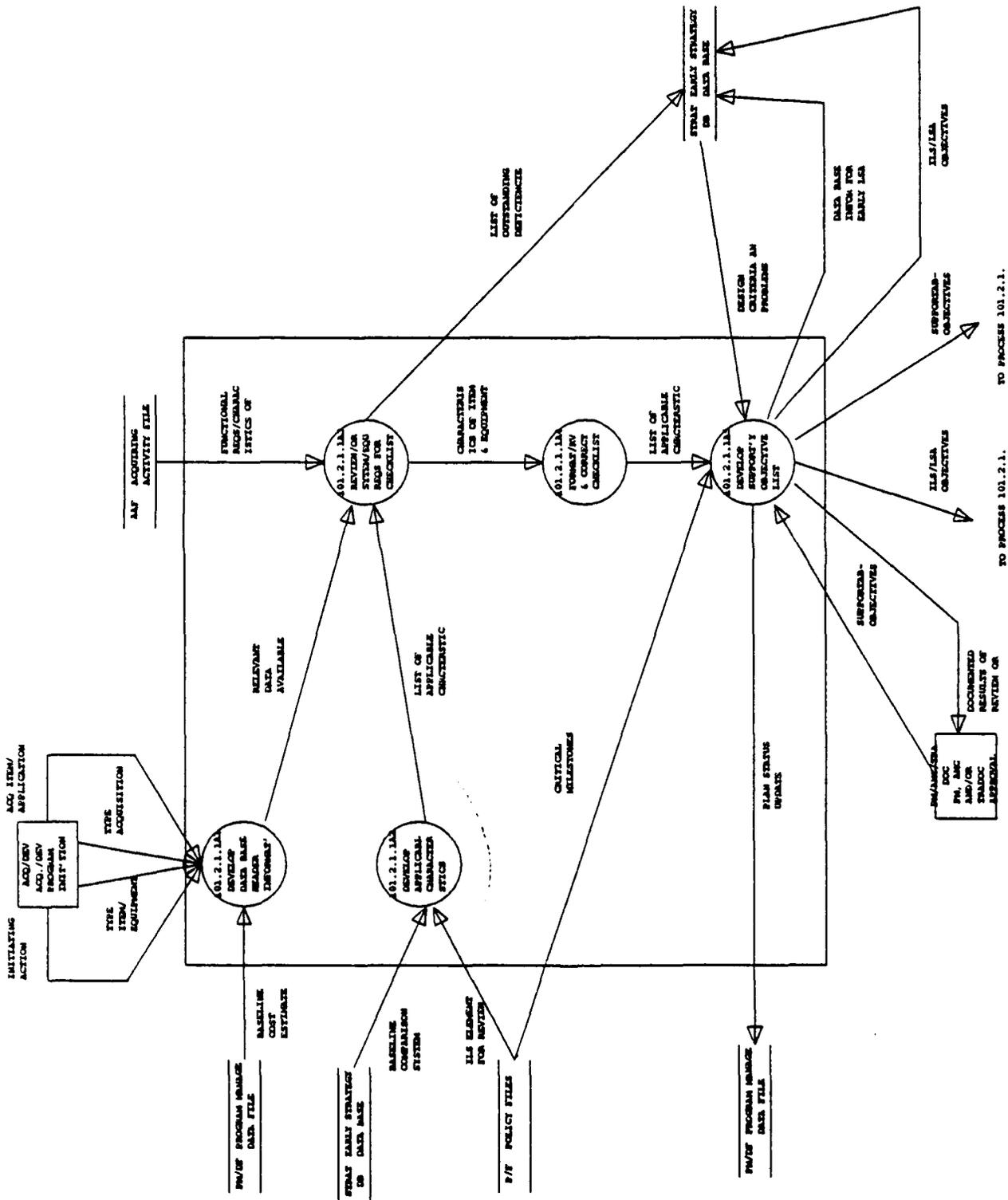
ANNEX B

LSA TASK 101 EARLY LSA STRATEGY

DATA FLOW DIAGRAMS & DATA DICTIONARY



101.2.1.5 (7/20/78)
 Created by: sld
 Revised by: STD
 Date changed: 18-JUN-80



101.2.1.1A PROGRAM LSA OBJECTIVES
 Created by: JACB
 Revised by: ELD
 Date changed: 16-JUN-90

Name	Label	Description
101.2.1.1	PREPARE SUPPORT'Y OBJECTIVES	<p>The LSA objectives can be categorized in three basic groups:</p> <p>1.SYSTEM LEVEL LOGISTIC SUPPORT ANALYSIS:</p> <ul style="list-style-type: none">* System design and operational concept influence.* Identification of supportability, cost, and readiness drivers.* Support concept development* System supportability, cost, and readiness objectives.* Tradeoffs. <p>2.ILS ELEMENT LEVEL LOGISTIC SUPPORT ANALYSIS:</p> <ul style="list-style-type: none">* Support system optimization.* Logistic support resource requirements identification.* Task and skills analysis.* Early fielding analysis.* Post production support analysis. <p>3.SUPPORTABILITY ASSESSMENT AND VERIFICATION:</p> <ul style="list-style-type: none">* Supportability assessment plans and criteria.* Support concept verification.* Verification of logistic support resource requirements.* Identification and correction of supportability problems. <p>In order to accomplish this, a data base will be established to record the essential characteristics of the proposed system acquisition. The data base will then be updated during the review process as each decision is made and as conditions or situations change. The recording of these activities provides the basis for the evolving early strategy and is used to prepare reports on status as well.</p> <p>Review the requirements documents to get an understanding of the broad objectives and systems characteristics. These are then compared with known similar or equivalent systems characteristics and used as a basis for defining the generic ILS/LSA objectives. Systems characteristics are taken from MIL-STD 1388.1A.</p>
101.2.1.1A1	DEVELOP DATA BASE HEADER INFORMAT'N	<p>The data flowing from the Acquiring Activity External Entity (ACQ/DEV) initiates this requirements and provides the basis for the information that will be formatted into a header and recorded in the data base for use with the ILS element system characteristics.</p>

Name	Label	Description
101.2.1.1A2	DEVELOP APPLICABLE CHARACTERISTICS CHECKLIST	<p>THIS PROCESS WILL DEVELOP THE CHECKLIST FOR EACH OF THE ILS ELEMENTS SYSTEMS CHARACTERISTICS. ONCE THE CHARACTERISTICS HAVE BEEN IDENTIFIED AS APPLICABLE, OBJECTIVES CAN BE DETERMINED. THE ILS ELEMENTS INVOLVED ARE: DESIGN INFLUENCE MAINTENANCE, PLANNING MANPOWER & PERSONNEL SUPPLY SUPPORT PACKAGING, HANDLING SUPPORT EQUIPMENT/TMD TRAINING/TRAINING & STORAGE TECHNICAL DATA DEVICES COMPUTER RESOURCES TRANSPORTABILITY & FACILITIES SUPPORT TRANSPORTATION STANDARDIZATION & RELIABILITY, AVAIL- SUPPORT MANAGEMENT INTEROPERABILITY ABILITY & MAINT- ANALYSIS COST ANALYSIS & AINABILITY FUNDING</p> <p>THESE ARE IDENTIFIED IN AR 700-127. TYPICAL CHARACTERISTICS FOR ILS ELEMENTS INCLUDE BUT ARE NOT LIMITED TO: MANPRINT, ENERGY EFFICIENCY, LIFE CYCLE COSTS, BITE, MAINTENANCE CONCEPTS/FACILITIES/TASKS/ORGANIZATIONS, PROVISIONING PLAN, NUMBERS OF PERSONNEL, SKILLS AND GRADES, RETENTION CONSTRAINTS, HAZARDOUS SKILL REQUIREMENTS, SECURITY CLEARANCE NEEDS, CATALOGING CODING, SETS/KITS/OUTFITS STORAGE SPACE AND REQUIREMENTS, HANDLING EQUIPMENT, DISPOSAL/DECONTAMINATION/DEMILITARIZATION REQUIREMENTS, PHYSICAL DIMENSIONS, TEST AND MEASUREMENT EQUIPMENT, TOOLS/TOOL KITS, TEST SITES, TRAINING PLANS AND EQUIPMENTS, TECHNICAL PUBLICATIONS, TEST RESULTS, COMPUTER RESOURCE MANAGEMENT PLAN/DEPLOYMENT, MAINTENANCE FACILITIES AT VARIOUS LEVELS, RAM REQUIREMENTS ETC.</p>
101.2.1.1A3	REVIEW/ORG SYTEM/EQUI REQS FOR CHECKLIST COMPARISON	<p>THIS PROCESS WILL REVIEW THE O&O PLAN AND MISSION NEEDS STATEMENT TO DETERMINE THE TYPES OF UNITS THAT WILL OPERATE, MAINTAIN AND SUPPORT THE SYSTEM EQUIPMENT AND ITS ASSOCIATED BATTLEFIELD DEFICIENCIES. THE ROC AND FUNCTIONAL REQUIREMENTS WILL ALSO BE REVIEWED. THESE WILL BE USED TO ESTABLISH THE CHARACTERISTICS OF THE SELECTED SYSTEM/EQUIPMENT WHEN COMPARED WITH THE HISTORICALLY SIMILAR AND GENERIC CHARACTERISTICS DEVELOPED IN OTHER PROCESSES. THIS INFORMATION MUST THEN BE ORGANIZED (FORMATTED) IN A SIMILAR FASHION TO THAT BEING DEVELOPED FROM THE GENERIC & KNOWN SYSTEMS.</p>
101.2.1.1A4	FORMAT/RVM & CORRECT CHECKLISTS	<p>THIS PROCESS WILL REVIEW, CORRECT AND OTHERWISE MODIFY THE THE EVOLVING SYSTEMS CHARACTERISTICS CHECKLIST SO THAT ONLY THOSE THAT APPLY TO THE SELECTED SYSTEM/EQUIPMENT REMAIN. THIS PROCEDURE INVOLVES COMPARING THE LIST OF APPLICABLE CHARACTERISTICS THAT WAS DEVELOPED FROM THE GENERIC ILS AND KNOWN SIMILAR /EQUIVALENT SYSTEMS WITH THOSE THAT WERE ORGANIZED IN PROCESS 101.2.1.1A3. THE NECESSARY HISTORICAL INFORMATION WILL THEN BE CARRIED FORWARD WITH THE SELECTED SYSTEMS CHARACTERISTICS.</p>
101.2.1.1A5	DEVELOP SUPPORT'Y OBJECTIVES LIST	<p>THIS PROCESS WILL REVIEW THE CORRECTED APPLICABLE ELEMENT SYSTEMS CHARACTERISTICS OF THE SELECTED SYSTEM/EQUIPMENT AND DEVELOP A LIST OF SUPPORTABILITY OBJECTIVES FOR CONSIDERATION. THIS IS DONE BY ASSUMING THE SUPPORTABILITY OBJECTIVES OF THE KNOWN (EQUIVALENT OR SIMILAR) SYSTEMS, THE STIPULATED SYSTEM/EQUIPMENT, DESIGN CRITERIA (INCLUDING MILESTONES) AND PREVIOUSLY NOTED (HISTORICAL) DEFICIENCIES. THE COMPARISON IS REVIEWED AND RECYCLED FOR MODIFICATION UNTIL A SATISFACTORY LIST OF OBJECTIVES IS ACHIEVED AND APPROVED..</p>

Name	Label	Description
101.2.1.1A5B1	REVIEW AND CORRECT DEFICIENCIES	THIS PROCESS TAKES THE LIST OF APPLICABLE LSA CHARACTERISTICS, COMPARES THEM WITH HISTORICAL DATA AND CORRECTS ANY DEFICIENCIES THAT RESULT. DEFICIENCIES THAT REMAIN UNCORRECTED ARE NOTED AND STORED IN THE DATA BASE FOR SPECIFIC TASK DESIGNATION. THESE MAY BE AS A RESULT OF NEW TECHNOLOGY THAT HAS NO CURRENT COMPARATIVE BASIS.
101.2.1.1A5B2	IDENTIFY OBJECTIVES AND ORGANIZE FOR PUBLICATION	THIS PROCESS WILL REVIEW THE LIST OF LSA SYSTEMS CHARACTERISTICS AGAINST ALL OF THE CRITERIA, MISSION AND FUNCTIONS TO DEVELOP A LIST OF OBJECTIVES. THE OBJECTIVES WILL BE FORMATTED FOR PUBLICATION AND REVIEW BY THE APPROVAL AUTHORITY. THE DEFICIENCIES ARE CYCLED THROUGH THE DATA BASE WHERE THEY WERE RECORDED SO THAT HISTORICAL ALTERNATIVES CAN BE REVIEWED TO ELIMINATE THEM.
101.2.1.1A5B3	PUBLISH DRAFT OBJECTIVES	THIS PROCESS WILL ORGANIZE AND PUBLISH THE OBJECTIVES LIST FOR APPROVAL BY THE APPROVING AUTHORITY. ONCE APPROVED, THE OBJECTIVES WILL PROVIDE THE BASIS FOR TASK DEVELOPMENT THAT IS REQUIRED FOR THE EARLY LSA STRATEGY. ANY OUTSTANDING DEFICIENCIES WILL REQUIRE TASKS TO CORRECT THEM.
101.2.1.2	DEVELOP EARLY LSA STRATEGY	In this process, the list of systems characteristics parameters are further refined by introducing system project constraints and relevant historical and otherwise applicable data from previously identified data bases in order to develop a candidate list of LSA tasks and subtasks. These are processed through a trade-off analysis. The resultant initial candidate list will be used to arrive at acceptably defined LSA tasks and subtasks (selected LSA tasks/subtask).
101.2.1.2A1	SELECT CRITICAL LSA PARAMETERS	THIS PROCESS WILL DETERMINE AND IDENTIFY ANY LIMITING FACTORS THAT COULD IMPACT LSA REQUIREMENTS DECISIONS (I.E. COST CONSTRAINTS, ACQUISITION SCHEDULE [POSSIBLE FAST TRACKING], DEGREE OF TECHNOLOGY INDICATING LIMITS ON PAST EXPERIENCE AND/OR HISTORICAL DATA, ETC.).
101.2.1.2A2	IDENTIFY RELEVANT DATA BASES	BASED UPON ANY LIMITING FACTORS THIS SYSTEM/EQUIPMENT, THIS PROCESS WILL REVIEW AVAILABLE HISTORICAL DATA BASES AND OTHER SOURCES OF HISTORICALLY RELATED DATA TO DETERMINE WHICH CAN BE USEFUL. COMMUNICATION WILL BE ESTABLISHED WITH THE PROPONENTS OR MAINTAINERS OF SUCH DATA TO DEVELOP PROCEDURES FOR EXTRACTING THE RELEVANT INFORMATION AND HOW IT WILL BE TRANSMITTED. THE INFORMATION FROM THE DATA BASES WILL PROVIDE THE BASIS FOR THE INITIAL CANDIDATE LSA TASKS & SUBTASKS SELECTION.
101.2.1.2A3	IDENTIFY LSA TASKS	THIS PROCESS WILL MATCH THE APPROVED OBJECTIVES AGAINST GENERIC AND KNOWN (SIMILAR OR EQUIVALENT) LSA TASKS AND THE OUTSTANDING DEFICIENCIES AND IDENTIFY THOSE REQUIRED TO BE PERFORMED TO MEET THOSE OBJECTIVES.
101.2.1.2A4	DEVELOP COST/TIME ESTIMATES FOR LSA (CELSA)	THIS PROCESS FOLLOWS THE GUIDELINES ESTABLISHED IN THE CELSA GUIDE IN DEVELOPING COST/TIME ESTIMATED FOR THE LSA TASKS IDENTIFIED TO THIS POINT. IT WILL ALSO TAKE THE HISTORICAL COST DATA AND COST MODELS FROM THE DATA BASE FOR REVIEW AND POSSIBLE USE. THE COST/TIME DATA DEVELOPED WILL BE USED IN THE NEXT PROCESS (TRADE-OFF) TO IDENTIFY THE MOST EFFICACIOUS LIST OF TASKS.

Name	Label	Description
101.2.1.2A5	PERFORM TRADE-OFF ANALYSIS	THIS PROCESS WILL PERFORM A TRADE-OFF ANALYSIS TO DETERMINE WHICH TASKS MUST BE DONE TO MEET THE OBJECTIVES ESTABLISHED FOR THIS SYSTEM/EQUIPMENT. THIS WILL RESULT IN A SELECTED LIST OF TASKS THAT WILL PROVIDE THE BASIS FOR THE EARLY LSA STRATEGY.
101.2.1.3	IDENTIFY SPECIFIC SUPPORT- FACTORS	<p>IN THIS PROCESS PROGRAM DOCUMENTATION, POLICY DOCUMENTS AND DESIGN CHARACTERISTICS TO QUANTIFY AND QUALIFY ALL SUPPORTABILITY FACTORS ASSOCIATED WITH THE DEVELOPMENT PROGRAM ARE REVIEWED (WHEREVER POSSIBLE). THE CANDIDATE LSA TASK/SUBTASK LIST AND SYSTEM SUPPORTABILITY OBJECTIVES ARE REVIEWED AGAINST THE O&O PLAN, DESIGN CHARACTERISTICS. RAM REQUIREMENTS DATA, SYSTEM/EQUIPMENT MISSION/FUNCTION DATA, EQUIPMENT WBS, OPERATIONAL CONCEPT AND SUPPORTABILITY GOALS IN ORDER TO ARRIVE AT AN UPDATED AND ACCEPTABLE SET OF SUPPORTABILITY OBJECTIVES.</p> <p>IN ADDITION, THIS PROCESS WILL IDENTIFY DESIGN RELATED SUPPORTABILITY FACTORS (IE):</p> <ol style="list-style-type: none">1.BITE (BUILT-IN TEST EQUIPMENT)2.ATE (AUTOMATIC TEST EQUIPMENT)3.PACKAGING ARRANGEMENTS4.INHERENT R & M CHARACTERISTICS5.TESTABILITY CHARACTERISTICS6.TRANSPORTABILITY CHARACTERISTICS7.SUPPORT EQUIPMENT REQUIREMENTS8.MAINTENANCE TASKS COMPLEXITY9.PERSONNEL SKILLS LEVEL
101.2.1.3A1	REVIEW PROGRAM SUPPORTA- FACTORS	<p>REVIEW PROGRAM DOCUMENTATION, POLICY DOCUMENTS, AND DESIGN CHARACTERISTICS TO QUALIFY AND QUANTIFY (WHERE POSSIBLE) ALL SUPPORTABILITY FACTORS ASSOCIATED WITH THE DEVELOPMENT PROGRAM. THESE SHOULD INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:</p> <ol style="list-style-type: none">1. INHERENT R&M CHARACTERISTICS OF THE ALTERNATIVE DESIGNS CONSIDERED IN THE PROGRAM.2. TESTABILITY CHARACTERISTICS OF THE ITEM/EQUIPMENT3. TRANSPORTABILITY CHARACTERISTICS4. ILS RELATED OPERATIONS AND SUPPORT (O&S) COSTS5. SYSTEM CHARACTERISTICS INFLUENCING SUPPORT REQUIREMENTS & PLANNING6. PLANNED LOGISTICS RESOURCES7. MAINTENANCE CONCEPT8. SUPPLY SYSTEM REQUIREMENTS/ SUPPLY SUPPORT CONCEPT9. GROSS ESTIMATES OF ACHIEVABLE R&M10. PROPOSED OPERATIONAL APPROACH
101.2.1.3A2	IDENTIFY/ QUANTIFY SPECIFIC SUPP'ABLT OBJECTIVES	<p>BASED ON PROGRAM OBJECTIVES, D/A POLICY, AND PROGRAM SUPPORTING DOCUMENTS, QUALIFY AND QUANTIFY THE SUPPORTABILITY OBJECTIVES FOR THE DEVELOPMENTAL PROGRAM FOR THE SELECTED ITEM/EQUIPMENT:</p> <p>SAMPLE SUPPORTABILITY OBJECTIVES MAY INCLUDE:</p> <ol style="list-style-type: none">1. LIFE CYCLE ECONOMIC SUPPORT GOALS2. TOTAL RESOURCE REQUIREMENTS GOAL (MEN, MONEY, MATERIEL)3. PEACETIME OPERATIONAL GOAL4. WARTIME UTILIZATION GOAL

Name	Label	Description
101.2.1.4	UPDATE LSA STRATEGY	<p>This process will correct any discrepancies identified during the development of the early LSA strategy task 101.2.1.2, and prepare an updated LSA strategy. When approved, this will become part of the program management documentation. The LSA strategy will be updated and reviewed at each program decision milestone.</p> <p>The report will outline proposed supportability objectives and related LSA tasks and subtasks to be performed early in the acquisition program in order to provide the most cost effective return on LSA invested resources.</p>
101.2.1.4A1	COMPARE TASKS TO AMC/TRADOC MISSIONS/ FUNCTIONS	<p>THIS PROCESS REVIEWS THE TRADOC AND AMC RESPONSIBILITIES IN ORDER TO IDENTIFY THE COMMAND RESPONSIBLE FOR ACCOMPLISHING THE SELECTED LSA TASKS.</p>
101.2.1.4A2	IDENTIFY/ ASSIGN LSA TASKS	<p>IDENTIFY THOSE LSA TASKS TO BE UNDERTAKEN BY TRADOC AND/OR AMC AND ASSIGN SPECIFIC TIME SCHEDULING THAT COINCIDES WITH THE CRITICAL MILESTONES OF THE PROGRAM MANAGER REQUIREMENTS</p>
101.2.1.4A3	DEVELOP LSA COSTS/ TASKS SCHEDULE	<p>THIS PROCESS WILL DEVELOP THE LSA STRATEGY CONSIDERING THE COST/SCHEDULE CONSTRAINTS</p>
101.2.1.5	PREPARE ILSP INPUTS	<p>The ILSP inputs relevant to the early strategy are prepared by the interfacing discipline responsible for the specific task accomplishment.</p>

Name	Label	Description
ACQ/ITM/APP	ACQ ITEM/ APPLICATION	THIS DATA FLOW CARRIES DATA RELEVANT TO THE ACQUISITION MANAGEMENT APPLICATION. IT CAN HAVE A DESIGNATION OF MAJOR, DESIGNATED ACQUISITION PROJECT (DAP), OR IN PROCESS REVIEW (IPR)BTO INDICATE ITS IMPORTANCE RELATIVE TO COST, ESSENTIALITY AND POSSIBLE POLITICAL CONSEQUENCE. BASED UPON THIS, THE NEED FOR THE LEVEL OF MSANAGEMENT EXCELLENCE IS DETERMINED.
APP/ILSA/PROG	ILS/LSA OBJECTIVES	THIS DATA FLOW CARRIES A THE SYSTEMS CHARACTERISTICS CHECKLISTS DEVELOPED BACK TO THE DATA BASE FOR STORAGE AND UPDATING AS THE PROJECT PROGRESSES. THESE ARE PUBLISHED AND SUBMITTED TO THE APPROVING AGENCY FOR REVIEW AND APPROVAL. ONCE THE CHECKLISTS HAVE BEEN ACCEPTED AND APPROVED, THIS FLOW CARRIES THOSE LISTS TO THE NEXT PROCESS.
APPL/CHAR	LIST OF APPLICABLE CHRCTERSTICS	THIS DATA FLOW WILL CARRY THE LIST OF CORRECTED AND APPLICABLE SYSTEMS CHARACTERISTICS FOR EACH ILS ELEMENT DEVELOPED IN PROCESS 101.2.1.1A15B1. THESE CHARACTERISTICS ARE THOSE DETERMINED TO BE RELEVANT FOR THE SELECTED SYSTEM/EQUIPMENT FOR WHICH SUPPORTABILITY OBJECTIVES ARE TO BE DERIVED.
BCE	BASELINE COST ESTIMATE	THIS DATA FLOW CARRIES A DETAILED ESTIMATE OF ACQUISITION AND OWNERSHIP, PROVIDING A BASIS FOR SUBSEQUENT TRACKING.
BCS	BASELINE COMPARISON SYSTEM	THE SELECTION OF A BASELINE COMPARISON SYSTEM (BCS) WHICH MOST CLOSELY REPRESENTS THE CHARACTERISTICS OF THE NEW SYSTEM/EQUIPMENT FOR (1) PROJECTING SUPPORTABILITY RELATED PARAMETERS, MAKING JUDGMENTS CONCERNING THE FEASIBILITY OF THE NEW SYSTEM/EQUIPMENT SUPPORTABILITY PARAMETERS, AND IDENTIFYING TARGETS FOR IMPROVEMENTS, AND (2) DETERMINING THE SUPPORTABILITY, COST, AND READINESS DRIVERS OF THE NEW SYSTEM/EQUIPMENT. THE DOCUMENTATION PROVIDES COMPARATIVE INPUT DATA FOR THE ANALYSIS AND PROJECTION OF A NEW/PROPOSED SYSTEM POTENTIAL READINESS, MANPOWER AND PERSONNEL REQUIREMENTS, AND O & S COSTS FOR EACH FOR EACH ALTERNATIVE SYSTEM/EQUIPMENT. REFERENCE: LSA TASK 203.
CELSA	CELSA GUIDE	THIS DATA FLOW CARRIES INFORMATION FROM THE POLICY FILES CELSA GUIDE RELEVANT TO COST/TIME CONSIDERATIONS FOR THE LSA TASKS.
CHR/IT/EQ	CHARACTERIST ICS OF ITEM & EQUIPMENT	THIS DATA FLOW CONTAINS THE PERFORMANCE AND PHYSICAL CHARACTERISTICS OF THE EQUIPMENT. THE PERFORMACE CHARACTERISTICS INCLUDE THE DYNAMIC ACTIONS AND QUALITATIVE CRITERIA COVERING OPERATIONAL AND ENDURANCE CAPABILITIES TO MEET USER NEEDS UNDER STIPULATED ENVIRONMENTAL, AS WELL AS OTHER CONDITIONS. THE PHYSICAL CHARACTERISTICS INCLUDE THE WEIGHT, VOLUME, LAYOUT, TRANSPORT, DURABILITY, HEALTH AND NBC CONSIDERATIONS.
COST DATA	COST DATA	THIS DATA FLOW CARRIES CCOST DATA FROM THE DATA BASE INCLUDING COST MODELS AND HISTORICAL TASK COST INFORMATION.
CRCL/MLSTON	CRITICAL MILESTONES	THIS DATA FLOW CARRIES MILESTONE INFORMATION TO PERMIT THE REVIEW OF THE SYSTEMS STRATEGY DEVELOPMENT AT EACH PROGRAM DECISION POINT.

Name	Label	Description
CRTCL/PRMTR	CRITICAL PARAMETERS	THIS DATA FLOW CARRIES IDENTIFIED GENERIC PARAMETERS FROM TH PM/DF (PROGRAM MANAGER'S DATA FILE) THAT ARE CONSIDERED TO BE CRITICAL CONSTRAINTS TO THE PROJECT. THEY MAY INCLUDE A FAST TRACKING REQUIREMENT, COST, TIME, SIZE, WEIGHT CONSTRAINTS, A RIGID ACQUISITION SCHEDULE REQUIREMENT. REQUIREMENTS BEYOND THE LIMITATIONS OF KNOWN AVAILABLE TECHNOLOGY, AND THE LIKE.
DB/INFO/LSA/STRGY	DATA BASE INFOR FOR EARLY LSA STRATEGY	THIS DATA FLOW CARRIES RELEVANT DATA TO AND FROM THE VARIOUS STORES (FILES AND DATA BASES) ASSOCIATED WITH IT. THE SPECIFIC INFORMATION CAN BE IDENTIFIED BY REFERENCING THE STORE, BASE OR PROCESS FROM WHICH IT COMES AND THE PROCESS WHICH WILL BE USING THE DATA IT CARRIES (TO WHICH IT GOES).
DEFICIENCIES	LIST OF OUTSTANDING DEFICIENCIES	THIS DATA FLOW CARRIES A LIST OF DEFICIENCIES THAT REMAIN OUTSTANDING AFTER THOSE OF THEM THAT HAVE BEEN REVIEWED AND CORRECTED HAVE BEEN PROCESSED. THIS LIST IS CIRCULATED BETWEEN THE DATA BASE AND PROCESS 101.2.1.1A TO ADDRESS AND POSSIBLY REDUCE DEFICIENCIES AS MUCH AS POSSIBLE.
DOC/RSULTS	DOCUMENTED RESULTS OF REVIEW OR ANALYSIS	This data flow carries the documented results of a review or analysis processed, that is to be published, distributed, stored or otherwise acted upon.
DR/ILSP (LSA)	DRAFT ILSP (LSA TASKS)	THIS DATA FLOW CARRIES A COMPOSITE OF ALL THE SUPPORT CONSIDERATIONS NECESSARY TO ASSURE THE EFFECTIVE AND ECONOMICAL SUPPORT OF A SYSTEM FOR ITS LIFE CYCLE.
DRFT/LSA/STRAT	DRAFT LSA STRATEGY	This data flow contains the draft LSA strategy explaining the rationale for doing the task, a list of tasks and subtasks required, life cycle phases, critical parameters, design criteria with associated estimated costs. The data in this flow will be modified if not approved and recycled back to process 101.2.1.2 until approved. When approved this flow will carry that additional information with the authorization to proceed to the next process. The approved strategy will be stored in the Program Manager's Data File (PM/DF). This is a manual transaction not shown on the dfd.
DSGN/CRIT/PROB	DESIGN CRITERIA AND PROBLEMS	DESIGN CRITERIA AND PROBLEMS - CONSISTS OF FOLLOWING FILES 1) PROBLEMS AND DEFICIENCIES RELATED TO THREAT 2) DEFICIENCIES FROM MAA 3) DESIGN CRITERIA 4) CHARACTERISTICS OF ITEM/EQUIPMENT 5) DESIGN CONSTRAINTS (DES/CONSTRAINTS) 6) APPLICABLE HISTORICAL DATA FOR CER ANALYSIS (HIS DATA)
FIN/STRAT	FINAL LSA STRATEGY	THIS DATA FLOW CARRIES ALL THE INFORMATION REGARDING THE FINAL LSA STRATEGY.

Name	Label	Description
FUNCT/CHAR	FUNCTIONAL REQS/CHARACT ISTICS OF SELECTED SYS /EQUIPMENT	ACRONYMS: AAF = ACQUIRING ACTIVITY FILE MNS = MISSION NEEDS STATEMENT O&O = ORGANIZATIONAL AND OPERATIONAL PLAN ROC = REQUIRED OPERATIONAL CAPABILITY PURPOSE: THIS DATA FLOW CARRIES FUNCTIONAL AND CHARACTERISTICS DATA FROM THE ROC, MNS, O&O AND FUNCTIONAL REQUIREMENTS FILES FROM THE AAF.
FUND/AVAIL/I/LSA	FUNDS AVAIL FOR ILS/LSA	THIS DATA FLOW CONTAINS THE FUNDING ESTABLISHED BY THE PROGRAM MANAGER FOR THE ILS AND LSA EFFORTS FOR A PARTICULAR SYSTEM.
ID/CRIT/PARA	IDENTIFIED CRITICAL LSA PARAMETERS	THIS DATA FLOW WILL CARRY ANY IDENTIFIED LIMITING FACTOR THAT COULD IMPACT LSA REQUIREMENTS DECISIONS SUCH AS COST CONSTRAINTS, ACQUISITION SCHEDULE, AVAILABLE DEGREE OF TECHNOLOGY.
ILS ELEMENTS	ILS ELEMENTS FOR REVIEW	THIS DATA FLOW CARRIES THE SET OF ILS REVIEW ELEMENTS SELECTED FROM AR 700-127, ANNEX E. THE SYSTEM SUPPORT STRUCTURE IS DEVELOPED AND ANALYZED BY TOPICS INCLUDED UNDER EACH ELEMENT.
INIT/ACT	INITIATING ACTION	THE REQUIRED ACTIONS OF THOSE (IF MORE THAN ONE) ACTIVITIES NECESSARY TO ACTUATE AN ILS ELEMENT ASSESSMENT FOR A SYSTEM AND/OR EQUIPMENT WHICH PROVIDES THE FORMAL AUTHORIZATION FOR THE PERFORMANCE OF AN ILS EFFORT. THESE INITIATING ACTIONS ARE NORMALLY PERFORMED BY THE ILSMT AND/OR THE PROGRAM MANAGER.
INIT/CAN/TSK/SEL	INITIAL CANDIDATE LSA TASKS/ SUBTASKS SEL	THIS DATA FLOW CARRIES THOSE GENERIC TASKS THAT HAVE BEEN IDENTIFIED TO BE NEEDED TO MEET THE INITIAL OBJECTIVES OF THE SELECTED SYSTEM/EQUIPMENT.
ITM/EQ/M&F	MISSION & FUNCTIONS OF THE ITEM/EQP MNT	THIS DATA FLOW CARRIES A LIST OF MISSIONS THAT THE SYSTEM BEING DEVELOPED IS TO PERFORM. THE MISSION IS BASED UPON THREATS IDENTIFIED IN THE MISSION AREA ANALYSIS. THIS TOGETHER WITH THE MISSION, ENABLES A SET OF FUNCTIONS TO BE ASSEMBLED TO ACCOMPLISH MISSION OBJECTIVES. FUNCTIONS CAN BE SHOOT, MOVE, RESUPPLY, TRANSPORT, ETC.
LSA/STRAT/APPROVED	APPROVED LSA STRATEGY	THIS DATA FLOW CARRIES THE APPROVED EARLY OR FINAL LSA STRATEGY TO THE NEXT PROCESS FOR FORMATTING INTO A PRESENTABLE FORM FOR PUBLICATION AND TO SIGNIFY THE CONTINUATION OF THIS PROJECT.
LSA/STRGY	LSA STRATEGY	THIS DATA FLOW WILL CARRY THE IDENTIFIED LSA TASKS THAT ARE TO BE EXAMINED IN THE TRADE-OFF ANALYSIS.
LSA/TSK/ASSGN	LSA TASK/ SUBTASK ASSIGNMENTS	THIS DATA FLOW CARRIES THE ASSIGNMENT OF THE SELECTED TASKS TO EITHER TRADOC OR AMC.
LSA/TSK/TEAM	LSA TASK TEAM ASSGNM	THIS DATA FLOW CARRIES THE DESIGNATIONS OF THE ASSIGNED TEAMS TO THE NEXT PROCESS. THESE ASSIGNMENTS ARE BASED UPON THE TASKS MISSIONS AND FUNCTIONS TO BE PERFORMED.

Name	Label	Description
LSA/TSK/TIM/REQ	LSA TASK TIME REQMNTS	THIS DATA FLOW CARRIES THOSE LSA TASKS IDENTIFIED FOR USE THAT WILL BE PROCESSED THROUGH A TRADE-OFF ANALYSIS. INCLUDED WITH THESE TASKS ARE THE TIME AND COST DATA ASSOCIATED WITH THEM.
MAINT/TSK/WITH/ASSOC	MAINT TASK WITH ASSOC'D RESOURCES	MAINTENANCE TASKS WITH ASSOCIATED RESOURCES FIELD INFORMATION;TYPE; STYLE : Narrative and numerical comments and/or extracts from LSAR records,reports or manuals . PURPOSE OF DATA : This data contains information on task descriptions, resources associated with the tasks. The data will be checked in the subsequent E1.5a processes for adequacy and consistency. SOURCE OF DATA : Primarily LSAR inputs ontasks and resources from processE1.5A2
O&O PLAN	OPERATIONS AND ORGANIZATNL PLAN	OPERATIONS AND ORGANIZATION PLANS FOR THE NEW SYSTEM/EQUIPMENT/CONCEPT UTILIZED TO ESTABLISH THE POTENTIAL SUPPORT CONCEPTS, READINESS FACTORS, AND COSTS IN ORDER TO DETERMINE THE VIABLE SUPPORT CONCEPT ALTERNATIVES. THE O&O PLAN CONTAINS INFORMATION OF THE TYPE, SIZE AND QUANTITY OF ENEMY SYSTEMS THAT POSE THE NEW/MODIFIED THREAT TO BE SATISFIED BY THE PROPOSED SYSTEM/EQUIPMENT/CONCEPT, THE OPERATIONAL SCENARIO, MISSION DURATION, MISSION FREQUENCY, AND MISSION PROFILE. THE O&O PLAN ALSO CONTAINS THE PROPOSED SYSTEM/EQUIPMENT MOBILITY REQUIREMENTS AND OTHER INFORMATION REQUIRED TO DEFINE THE BATTLEFIELD ENVIRONMENT, SUCH AS USED IN PROCESS 303.2.11.2 AND 402.2.4.2. SOURCE OF DATA: THE PROGRAM MANAGEMENT OR THE PROCUREMENT OFFICE.
OPER/SCEN	OPERATIONAL SCENARIO	ACRONYMS: NONE. PURPOSE OF DATA: THIS DATA FLOW WILL DESCRIBE THE THREAT TO BE COUNTERED, IN REGARD ITS CURRENT AND PROJECTED CAPABILITY. IT WILL CONTAIN THE VULNERABILITY AND OPERATIONAL EFFECTIVENESS OF THE PROPOSED SYSTEM. IT SHALL ALSO, DESCRIBE IN BROAD BANDS THE MAIN OPERATIONAL CHARACTERISTICS OF THE PROPOSED SYSTEM. SOURCE OF DATA: PROGRAM PROCUREMENT AND ENGINEERING OFFICE. (O&O PLAN)
P & P	POLICIES & PROCEDURES	PURPOSE: REGULATIONS TAILORED TO THE SELECTED ALTERNATIVE PRESCRIBING POLICIES AND PROCEDURES FOR DEVELOPING MANPOWER AND/OR PERSONNEL REQUIREMENTS FOR OPERATION & MAINTENANCE SUPPORT OF THE ITEM. POLICIES & PROCEDURES ARE DESCRIBED IN FOLLOWING REGULATIONS-- AR 570-2 (MARC) . AR 602-1 (HFEP) . AR 602-2 (MANPRINT) . AR 700-47 AR 611-1 (MOS) . AR 611-101 (SSC'S) . AR 611-112 (SSC'S) . AR 611-201 (SSC'S) . SOURCE OF DATA: POLICY FILE(2) .

Name	Label	Description
PLAN STATUS UPDATE	PLAN STATUS UPDATE	ACRONYMS: PURPOSE: THIS DATA FLOW CONTAINS INFORMATION REGARDING THE PLAN OBJECTIVES DEVELOPED TO-DATE. IT SERVES TO PROVIDE THE PROGRAM MANAGER WITH INFORMATION REGARDING THE STATUS AND RELEVANCY OF THE PROJECT TO-DATE.
REL/DATA	RELIABILITY DATA	PURPOSE OF DATA: TO PROVIDE THE ANALYST WITH APPROPRIATE RELIABILITY DATA. THE DETERMINATION OF THE POSSIBLE AND PROBABLE FAILURE MODES REQUIRES AN ANALYSIS OF RELIABILITY DATA ON THE ITEM SELECTED TO PERFORM EACH OF THE SYSTEM INTERNAL FUNCTIONS. IT IS ALWAYS DESIRABLE TO USE RELIABILITY DATA RESULTING FROM RELIABILITY TESTS ON THE SPECIFIC EQUIPMENT TO BE USED, THE TESTS PERFORMED UNDER THE IDENTICAL CONDITIONS OF USE. WHEN SUCH TESTS ARE NOT AVAILABLE, RELIABILITY DATA FROM MIL-HDBK-217 OR FROM OPERATIONAL EXPERIENCE AND TESTS PERFORMED UNDER SIMILAR USE CONDITIONS ON ITEMS SIMILAR TO THOSE IN THE SYSTEM SHOULD BE USED. SOURCE OF DATA: LOGISTICS SUPPORT ANALYSIS RECORD/B
REL/DTA/AVAIL	RELEVANT DATA AVAILABLE	ACRONYMS: PURPOSE: THIS DATA FLOW CONTAINS INFORMATION TAKEN FROM A DATA STORE, EXTERNAL ENTITY, OR PREVIOUS TASKS AND PROCESSES SPECIFICALLY REQUIRED FOR THE PROCESS THAT IT FEEDS. READ THE DESCRIPTION OF THE ENTITY FROM WHICH THIS INFORMATION FLOWS AND TO WHICH IT GOES TO DETERMINE ITS CONTENTS.
REL/PARAMS	RELIABILITY PARAMETERS	THIS DATA FLOW CONTAINS MEASURES OF THE SYSTEM'S RELIABILITY. IT INDICATES THE UNITS OF MEASURE RELATING TO OPERATIONAL READINESS OR MISSION SUCCES.
REL/TECH/DTA	RELEVANT TECHNICAL DATA	THIS DATA FLOW CARRIES TECHNICAL INFORMATION RELEVANT TO THE ENTITY (PROCESS, DATA STORE OR EXTERNAL ENTITY) TO WHICH IT FLOWS. TO DETERMINE THE DATA CONTENT, REVIEW THE ENTITY DESCRIPTION FROM WHICH IT FLOWS AND THE ENTITY DESCRIPTION TO WHICH IT FLOWS.
SEL/LSA/TSK	SELECTED LSA TASKS/SUBTASKS	THIS DATA FLOW CARRIES THE LSA TASKS/SUBTASKS SELECTED IN THE EARLY LSA STRATEGY. FOR OTHER PROCESSES IT CARRIES THE SELECTED TASKS/SUBTASKS THAT WERE APPROVED.
SUP/OBJ	SUPPORTAB-OBJECTIVES	THIS DATA FLOW CARRIES ITERATIONS OF SUPPORTABILITY OBJECTIVES SUBMITTED FOR REVIEW AND MODIFIED FOR ADDITIONAL ANALYSIS UNTIL APPROVED. WHEN APPROVED, IT CARRIES THE APPROVAL AND LIST OF APPROVED ILS/LSA OBJECTIVES.

Name	Label	Description
SUPPORT/DESGN/REL	SUPPORT- DESIGN RELATED	PURPOSE: A COMPLETE SET OF SUPPORT AND SUPPORTABILITY CHARACTERISTICS AND OBJECTIVES FOR NEW SYSTEM/EQUIPMENT. AS ADDITIONAL DECISIONS ARE MADE, THIS FILE IS UPDATED. I. SUPPORTABILITY CHARACTERISTICS: A. SUPPORT CONCEPTS B. RELIABILITY AND MAINTAINABILITY PARAMETERS C. OPERATIONS AND SUPPORT COSTS D. LOGISTIC SUPPORT RESOURCES E. FACILITIES/GROUND SUPPORT II. SUPPORTABILITY OBJECTIVES: - MEASURED BY MEAN. A. REPAIR TURNAROUND TIME B. TIME TO REPAIR C. SUPPORT EQUIPMENT UTILIZATION RATES D. MANPOWER REQUIREMENTS PER MAINTENANCE ACTION E. PERSONEL REQUIREMENTS SOURCE OF DATA: RESULTS OF (TASK 205).
TRADC/AMC/DTA(2)	TRADOC/AMC DATA(2)	THIS DATA INCLUDES: 1) TRADOC/AMC ILS TEAM LIST 2) TRADOC/AMC MISSION AND FUNCTIONS
TYP/ACQ	TYPE ACQUISITION	THIS DATA FLOW IDENTIFIES THE ACQUISITION TYPE WHICH CAN BE FDEV (FULL DEVELOPMENT), NDI (NON-DEVELOPMENTAL ITEM), MNDI (MODIFIED NON-DEVELOPMENTAL ITEM), OR PPIP (PREPLANNED PRODUCT IMPROVEMENT PROGRAM). BASED UPON THIS, A DETERMINATION REGARDING THE EXTENT OF ASSESSMENTS TO BE MADE CAN BE EVALUATED.
TYP/ITM/EQ	TYPE ITEM/ EQUIPMENT	THIS DATA FLOW REFERS TO THE MISSION USE OF THE ITEM/EQUIPMENT (I.E. AIRCRAFT, ELECTRONIC, MISSILE, ORDNANCE, SHIP, SPACE OR VEHICLE SYSTEM). MORE THAN ONE SYSTEM MAY BE APPLICABLE. THIS IDENTIFICATION DRIVES SUBJECTIVE RISK ANALYSIS FACTORS, OPERATIONAL AVAILABILITY, ETC.

Name	Label	Description
WBS	WORK BREAKDN STRUCTURES FOR DEFENSE MATER'L ITEM	<p>To aid the analyst by providing guidance in the preparation of a standard Work Breakdown Structure. The data comes in the form of a Military Standard pamphlet under the title "Work Breakdown Structures for Defense Materiel Items."</p> <p>The MIL-STD identifies Army materiel by general classifications:</p> <ol style="list-style-type: none">1. Aircraft system2. Electronics system3. Missile system4. Ordnance system5. Ship system6. Space system7. Surface vehicle system <p>Each of the major categories (known as level 1 items) is further stratified into major systems (known as level 2 items). As an example, aircraft systems are broken down into the following major systems:</p> <ol style="list-style-type: none">1. Air vehicle2. Training3. Peculiar support equipment4. Systems test and evaluation5. System/project management6. Data7. Operational/site activation8. Common support equipment9. Industrial facilities10. Initial spares and initial repair parts <p>Level 3 items contain the last indenture for which guidance is provided. This level addresses such items as airframe, propulsion units, communications, etc. However, guidance in the MIL-STD states that "...The project summary WBS will be tailored to the project objectives..."</p> <p>REFERENCE: MIL-STD-881A, Work Breakdown Structures for Defense Materials</p>

Name	Label	Description
AAF	ACQUIRING ACTIVITY FILE	CONTAINS THOSE RECORDS, DOCUMENTS, DECISION PAPERS, SCHEDULES THAT WERE PREPARED AS PART OF THE ACQUISITION INITIATION, JUSTIFICATION, AND PLANNING PRIOR TO THE ASSIGNMENT OF A PROGRAM MANAGER. THE ITEMS IN THIS DATA STORE INCLUDE: A. THREAT ANALYSIS DATA B. O&O PLAN C. READINESS OBJECTIVES DATA D. FUNCTIONAL REQUIREMENTS DATA E. PROJECTED SCHEDULE DATA F. LOGISTICS RESOURCES DATA G. DESIRED R & M PARAMETERS H. TOA I. TOD J. COST & OPERATIONAL EFFECTIVENESS ANALYSIS (COEA) DATA K. PROJECTED COST DATA L. JUSTIFICATION OF MAJOR SYSTEM NEW START (JMSNS) DATA M. REQUIRED OPERATIONAL CAPABILITY (IF PREPARED PRIOR TO ASSIGNMENT OF PROGRAM MANAGER - ELSE FOUND IN PM FILES) O. MISSION NEEDS DOCUMENT (MND)
D/A	DA ORGANIZATION	CONTAINS THE LISTING OF POTENTIAL TEAM MEMBERS OF TRADOC AND AMC, INFO DATA BASE SPECIFIED BY THEIR AREA OF EXPERTISE, NAME, ADDRESS, P.O.C., AND OTHER PERTINENT INFORMATION NEEDED FOR SELECTION OF SPECIFIC LSA TASKS AND SUBTASKS THAT WILL BE REQUIRED FOR THE DEVELOPMENT PROGRAM.
HIS/DATA	HISTORICAL DATA SIMILAR ITEMS	THIS DATA STORE CONTAINS CHARACTERISTICS OF EXISTING SYSTEMS, SUBSYSTEMS , EQUIPMENT INCLUDING HARDWARE DESIGN, OPERATION & SUPPORT CONCEPTS THROUGH PROJECT SUPPORTABILITY RELATED PARAMETERS. IT INCLUDES IDENTIFICATION OF TARGETS FOR IMPROVEMENT AND DETERMINES SUPPORTABILITY. IT CAN BE USED AS A BASELINE TO SUPPORT OR PREDICT THE FUNCTIONAL REQUIREMENTS AND CHARACTERISTICS OF THE SYSTEM/EQUIPMENT UNDER CONSIDERATION.
MAINT/PLN/FILE	MAINTENANCE PLAN FILE	THE MAINTENANCE PLAN AS REQUIRED BY THE ILSP AND DEFINED BY: DI-S-1823 DI-L-25620C DI-R-7111 DI-A-5210 MIL-STD 470A NORMALLY PREPARED BY THE SYSTEM/EQUIPMENT DEVELOPMENT CONTRACTOR AND SUBMITTED TO THE ACQUIRING ACTIVITY AND/OR THE PROGRAM MANAGER FOR REVIEW/APPROVAL. THIS FILE ALSO CONTAINS, AS APPROPRIATE, THE OUTPUT FROM: SUBTASK 301.2.4.2.2, THE RESULTS OF THE ECONOMIC EVALUATION OF THE SCHEDULED VS UNSCHEDULED MAINTENANCE ASSESSMENTS. SUBTASK 301.2.4.2.4, THE EVALUATION OF UNDETECTABLE IMPENDING FAILURES SUBTASK 301.2.4.2.5, THE EVALUATION OF THE DETECTABLE FAILURES

Name	Label	Description
P/F	POLICY FILES	<p>CONTAINS THOSE MILITARY PUBLICATIONS, DECISION PAPERS, MISSIONS & FUNCTIONS, etc, WHICH ARE NEEDED TO ESTABLISH THE LOGISTICAL SUPPORT AND REVIEW REQUIREMENTS OF THE ITEM/EQUIPMENT DEVELOPMENT PROGRAM.</p> <p>THIS DATA STORE INCLUDES: [SEE ALSO P/F(2)]</p> <ol style="list-style-type: none">1. AR 12-16, "MUTUAL LOGISTICS SUPPORT BETWEEN THE U.S. AND OTHER NORTH ATLANTIC TREATY ORGANIZATION FORCES"1a. AR 70-1, "SYSTEMS ACQUISITION POLICY AND PROCEDURES"1b. AR 70-2, "RESEARCH, DEVELOPMENT, & ACQUISITION MATERIEL STATUS RECORDING"1c. AR 70-10, "R&D - TEST & EVALUATION DURING DEVELOPMENT AND ACQUISITION OF MATERIEL"1d. "AR 570-9, "MANPOWER AND EQUIPMENT CONTROL - HOST NATION SUPPORT"2. AR 700-9, "POLICIES OF THE ARMY LOGISTIC SYSTEM"3. AR 700-82, "JOINT REGULATION GOVERNING THE USE AND APPLICATION OF UNIFORM SOURCE MAINTENANCE AND RECOVERABILITY CODES"4. AR 700-127, "INTEGRATED LOGISTICS SUPPPORT"5. AR 725-50, "REQUISITIONING, RECEIPT AND ISSUE SYSTEM"6. AR 750-1, "MAINTENANCE OF SUPPLIES & EQUIPMENT - ARMY MATERIEL MAINTENANCE CONCEPTS & POLICIES"7. AMC-R-700-27, "LEVEL OF REPAIR ANALYSIS (LORA) PROGRAM"8. AMC-R-750-10, "DEPOT MAINTENANCE INTERSERVICE"9. DA PAM 700-410. DA PAM 700-28, "INTEGRATED LOGISTIC SUPPORT PROGRAM ASSESSMENT ISSUES AND CRITERIA"11. DA PAM 700-50, "INTEGRATED LOGISTIC SUPPORT - DEVELOPMENTAL SUPPORTABILITY TEST AND EVALUATION GUIDE"12. DA PAM 700-55, "INSTRUCTIONS FOR PREPARING THE INTEGRATED LOGISTIC SUPPORT PLAN"12a. DA PAM 738-750, "THE ARMY MAINTENANCE MANAGEMENT SYSTEMS (TAMMS)"13. DA PAM 750-21, "LOGISTIC SUPPORT MODELLING"14. AMC PAM 700-4, "LOGISTICS SUPPORT ANALYSIS TECHNIQUES GUIDE (WITH PALMAN)"14a. AMC PAM 700-11, "LOGISTICS SUPPORT ANALYSIS REVIEW TEAM GUIDE"15. AMC PAM 750-2, "MAINTENANCE OF SUPPLIES AND EQUIPMENT GUIDE TO RELIABILITY CENTERED MAINTENANCE"16. MIL-STD-152, "TECH REVIEW GUIDELINES"17. MIL-STD-210A, "CLIMATIC EXTREMES FOR MILITARY EQUIPMENT"18. MIL-STD-470, -471, "MAINTAINABILITY STANDARDS"19. MIL-STD-756, "RELIABILITY MODELLING & PREDICTIONS"20. MIL-STD-780, "MAINTENANCE ENGINEERING ANALYSIS CONTROL NUMBER (MEACNS) FOR AERONAUTICAL EQUIPMENT, UNIFORM NUMBERING SYSTEM"21. MIL-STD-781, "RELIABILITY DESIGN QUALIFICATION AND PRODUCTION ACCEPTANCE TESTS: EXPONENTIAL DISTRIBUTION"22. MIL-STD-785B, "RELIABILITY PROGRAM FOR SYSTEMS AND EQUIPMENT DEVELOPMENT & PRODUCTION"23. MIL-STD-810, "ENVIRONMENTAL TEST METHODS & ENGINEERING GUIDELINES"24. MIL-STD-881, "WORK BREAKDOWN STRUCTURES FOR DEFENSE MATERIEL ITEMS"25. MIL-STD-882, "SYSTEM SAFETY PROGRAM REQUIRMENTS"26. MIL-STD-965, "PARTS CONTROL PROGRAM"27. MIL-STD-1369A, "INTEGRATED LOGISTIC SUPPORT PROGRAM REQUIREMENTS"28. MIL-STD-1388-1A, "LOGISTICS SUPPORT ANALYSIS"29. MIL-STD-1388-2A, "LOGISTICS SUPPORT ANALYSIS RECORD"30. MIL-STD-1629, "PROCEDURES FOR PERFORMING A FAILURE MODE, EFFECTS & CRITICALITY ANALYSIS"

Name	Label	Description
		31. MIL-HDBK-472, "MAINTAINABILITY PREDICTION"
		32. MIL-M-24100B, "FUNCTIONALLY ORIENTED MAINTENANCE MANUALS (FOMM) FOR EQUIPMENT & SYSTEMS"
		33. MRSAP 700-11 CELSA GUIDE
PM/DF	PROGRAM MANAGER DATA FILE	CONTAINS THOSE FILES AND DATA WHICH ARE NORMALLY DEVELOPED BY AND/OR RETAINED BY THE PROGRAM MANAGER FOR PROPER MANAGEMENT OF THE DEVELOPMENT PROGRAM. THESE FILES INCLUDE: 1. ENGINEERING DRAWINGS 2. ENGINEERING CHARACTERISTICS 3. DT/OT RESULTS 4. CONCEPT FORMULATION PACKAGE (CFP) 5. DESIGN CONCEPT PAPER (DCP) 6. TYPE TECHNICAL REVIEWS REQUIRED 7. MILESTONE SCHEDULES 8. FUNDING PROFILES 9. REQUIRED OPERATIONAL CAPABILITIES (ROC) 10. ITEM/EQUIPMENT SPECIFICATIONS 11. ITEM/EQUIPMENT MISSIONS & FUNCTIONS 12. EQUIPMENT, MANPOWER, AND TECHNICAL RISK ASSESSMENTS (FROM LSA TASK 301.2.3 13. TRADE OFF DETERMINATION ANALYSIS (TOD) 14. TRADE OFF ANALYSIS (TOA) 15. BEST TECHNICAL APPROACH ANALYSIS (BTA) 16. COST AND OPERATIONAL-EFFECTIVENESS ANALYSIS (COEA) 17. BASELINE COST ESTIMATE
STRAT DB	EARLY STRATEGY DATA BASE	THIS DATA STORE IS COMPRISED OF THE CONTENTS OF TWO OTHER STORE: THE LSA STRATEGY FILE (LSF) THE DATA BASE FILE-DEVELOP PROGRAM (DP/DBF) BOTH WILL SUPPLY THE RELEVANT DATA REQUIRED FOR EACH PROCESS IT IS USED IN AND BOTH WILL BE UPDATED WITH THE DECISIONS MADE, THE DATA ACCUMULATED AND THE STATUS OF THE PROJECT.

Name	Label	Description
ACQ/DEV	ACQ./DEV PROGRAM INIT' TION	THE ACQUIRING ACTIVITY WHICH INITIATES THE REQUIREMENT FOR A LSA TASK/ILS ASSESSMENT BASED ON MILESTONES AND/OR PROGRAM TIME SCHEDULED REQUIREMENTS.
PM/AMC/TRADOC	PM, AMC AND/OR TRADOC APPROVAL	EACH ITERATION OF THE DEVELOPMENT OF THE ILS/LSA CONCEPT REQUIRES THE APPROVAL OF THE PROGRAM MANAGER OR THE RESPECTIVE DIRECTORATES OF AMC AND/OR TRADOC PRIOR TO THE EXTENSION OF THE CONCEPT TO THE ACTUAL DEVELOPMENT OF THE EARLY ILS/LSA STRATEGY. AS A RESULT OF PERFORMING AN ANALYSIS OR AN ASSESSMENT, RECOMMENDED CHANGES TO A REQUIRED DOCUMENT WILL BE SUBMITTED TO THE PROGRAM MANAGER TO TAKE FURTHER ACTION WITH THE AMC AND TRADOC.
PUB/GRP	PUBLICITNS GROUP	THIS ENTITY IS RESPONSIBLE FOR SUPPORTING THE PM BY PUBLISHING ALL DRAFT, INTERMEDIATE AND FINAL REPORTS.

ANNEX C

**LSA TASK 101
Early LSA Strategy Structured Design**

ANNEX C
LSA TASK 101
EARLY LSA STRATEGY STRUCTURED DESIGN

PROCESS 101.2.1 - DEVELOP EARLY LSA STRATEGY

Due to the complexity involved in major weapon system design, the development of the LSA strategy is one of the most difficult tasks faced by the logistic engineer. The following methodology is submitted to help the logistic manager in determining a logistic support analysis strategy that will produce a cost effective LSA program to accomplish the LSA objectives in a timely manner. However, it must be understood that all LSA tasks must be completed in a timely manner. If the selected task is late or cannot be completed, making the supportability and supportability related data unavailable in time to influence design, then time and resources were expended unnecessarily that could have been put to use elsewhere.

The LSA objectives can be categorized into three (3) basic groupings:

- A. System Level Logistic Support Analysis Including the Following:
 - 1. System design and operational concept influence.
 - 2. Identification of supportability/cost/readiness drivers.
 - 3. Support concept development.
 - 4. System supportability/cost/readiness objectives.
 - 5. Trade-offs.

- B. ILS Element Level Logistic Support Analysis Including:
 - 1. Support system optimization.
 - 2. Logistic support resource requirements identification.
 - 3. Task and skills analysis.
 - 4. Early fielding analysis.
 - 5. Post production support analysis.

- C. Supportability Assessment and Verification Including:
 - 1. Supportability assessment plans and criteria.
 - 2. Support concept verification.
 - 3. Verification of logistic support resource requirements.
 - 4. Identification and correction of supportability problems.

PROCESS 101.2.1.1 - PREPARE SUPPORTABILITY OBJECTIVES

OBJECTIVE:

To provide the necessary data to allow the selection, tailoring and scheduling of LSA tasks. Using this approach, the LSA program provides timely and accurate information for program decision points and influences system design to improve supportability.

- A. Assemble intelligence data relative to the new procurement in a data base called the Early Strategy Data Base.
- B. Gather the analyses, assessments and historical data from a variety of sources.
- C. Organize data to generate information to assist the logistics manager in developing a cost effective LSA program.
- D. Analyze and assess the following documentation as a prerequisite to LSA Program Strategy Development:
 1. Use studies.
 2. Probable design.
 3. Preliminary design analysis for each alternative system.
 4. Type of acquisition.
 5. Design freedom.
 6. Degree of new technology.
 7. Historical data review (similar or equivalent system).
 8. Constraints analysis.
 9. Work already accomplished.

PROCESS 101.2.1.1A1 - Develop Database Header Information

OBJECTIVE:

At Program initiation, it is necessary for the ILS Manager to develop a data base in which to record the essential characteristics of the proposed system acquisition for evolving a viable ILS/LSA strategy.

The data base must be updated as decisions are rendered during the review process. As conditions/situations change during the life cycle of the equipment, the file must record those activities and resultant strategy changes. The file may also be used to produce reports as desired.

A. Build file - Essential file header data input items are:

1. System Name: (40 character - A/N) (Input from Combat or Materiel Developer's files)
2. Program Manager Identification: (10 character - A/N) (Office Symbol of Combat or Materiel Developer Manager)
3. Contract Number: (25 character - A/N) (If awarded, the contract number of the item/equipment pertinent to the Acquisition Program) (Extract from contract)
4. Procuring Activity: (10 character - A/N) (Designator of Command buying the item/equipment)
5. LSA Performing Activity: (10 character - A/N) (Identifier of Government or Contractor activity performing the LSA)
6. LSA Reporting Activity: (10 character - A/N) (Identifier of Government or Contractor activity reporting the LSA)
7. Acquisition Management Application:

NOTES: Designation of Major, Designated Acquisition Project (DAP) or In Process Review (IPR) indicates overall program importance. Each is political, cost and essentiality driven. A high level of program review categorically indicates the need for a greater level of management excellence and is therefore less manpower and funding resource constrained. Input is from Program Guidance Documentation.

End-Item user indicators assist management in development of resource allocation schemes and the time phasing of production capabilities. The broader the end user base, the more critical the review will become of ILS management issues and assessments topics.

Criticality of ILS assessment performance of resource and resource support tasks are dictated by the complexity of hardware technology, manpower resource availability, mobility requirements, etc. Not the least of these tasks are facility requirements that may

require funding from Military Construction - Army, which is a five year minimum funding cycle.

System cost must always be kept in mind. As history reflects, the higher the cost, the less likely desired quantities of "operational float" equipment/item dollars will be available. Cost growths will subject the program to cutbacks for "bill payers". Cost will draw political attention and/or competition, and must be considered in the subject risk analysis process. Fewer operational float items/equipment will subsequently dictate the conformance/proof of compliance with established reliability and maintainability goals.

Acquisition Management Application: (3 character - A) (Ref AR 15-14 and AR 70-1, Designator are Major, DAP, or IPR) (Use Y = Yes to identify application)

8. Type Acquisition: (4 character - A) (Ref AR 70-1)

NOTE: Type Acquisition, i.e., Developmental, NDI or PIP, generally is indicative of program scale of time and depth, or degree of ILS/LSA data required or permissible under the program. For example, when Non-Developmental Systems are dictated without R&D funding for military conversion, then many assessment topics are negated from consideration or contracting.

FDEV = Full Development

NDI = Non-Developmental Item

MNDI = Modified Non-Developmental Item

PPIP = Preplanned Product Improvement Program
(Use Y = Yes to identify appropriate type)

9. Acquisition Process: (1 character - A) (Ref. AR 70-1)

T = Traditional - Life Cycle Management Model

S = Streamlined - Army Streamlined Acquisition Process

(Use Y = Yes to identify correct process)

10. Type System: (Indicates mission use of item/equipment)

NOTE: Type System indicators (and there may be more than one applicable) are crucial in establishing subjective risk analysis factors (i.e., Combat, Air Defense, Support or Training is an underlying risk assessment/analysis driver.) Combat systems are inherently more RAM sensitive than support systems. The nature of the hardware system drives the degree of applicability of each ILS assessment topic and or subtopic.

- (1) Aircraft System
 - (2) Electronic System
 - (3) Missile System
 - (4) Ordnance System
 - (5) Training System
 - (6) Ship System
 - (7) Space System
 - (8) Vehicle System
- (Use Y = Yes to identify appropriate type(s))

11. System Estimated Cost: (10 character number) (Round to nearest \$). (Obtained from Baseline Cost Estimate or factored estimates from like or comparable systems. See PM/DF.)

PROCESS 101.2.1.1A2 - Develop Applicable Characteristics Checklists

OBJECTIVE:

To build a checklist files with a header established under Process 101.2.1.1A1. The identified logistic factors are used to extract information from identified similar or equivalent systems.

- A. Review requirements documents and available system specifications to determine preliminary design, operation, and maintenance concepts.
- B. Using the ILS Elements and subelements identified in Annex E of AR 700-127, as a checklist, identify those logistic areas that must be considered when developing support for the new system.

NOTE: The example characteristics shown (see Annex F) are not all inclusive, nor will all apply. Those characteristics that do apply, will then be compared against historically similar and/or equivalent systems to determine the characteristic parameters that are relevant, thereby saving any time associated with developing such characteristic/parameters.

PROCESS 101.2.1.1A3 - Review/Organize System/Equipment Data for Checklist Comparison

- A. Review information regarding the goals of the mission, the type of resources necessary to operate, maintain and otherwise support the selected system, and any recognized outstanding deficiencies from the O&O plan and Mission Needs Statement. In addition review any of the reference documentation that is available.
- B. During the review, extract any information that relates to a particular ILS element or Subelement identified in the checklist developed in process 101.2.1.1A2. Tag the extracted information with the element or subelement name.

REFERENCES:

Operational and Organizational (O&O) Plan
Required Operational Capability (ROC)
Mission Area Deficiency statements
Use Studies
Statements of Need, Justification for Major System New Starts (JMSNS)
Commercial Training Device Requirement (CDTR)
Qualitative Research Requirement for Nuclear Weapons Effects.
Nonsystem Training Device Requirement (NTDR)
Joint Service Operational Requirement (JSOR)
Expedited Essential Required Operational Capability (EEROC)
Quick Reaction Capability (QRC) documents.
Independent studies and/or analysis.
DODD 5000.1, DODD 5000.2, ARs 70-1, 700-86, 71-9, and 105-7.

PROCESS 101.2.1.1A4 - Format/Review and Correct the Checklists

- A. Sort the data developed in Process 101.2.1.1A3 by ILS element and subelement.
- B. Once sorted, review the data. Remove any redundant information and then combine related information.
- C. Identify any conflicting information that may lead to poor supportability objectives. These conflicts need to be resolved by making changes to the requirements documents from which they were extracted. In some cases, resolve the discrepancies by keeping the more stringent requirement. For example, one document states that there are no NATO standardization requirements while another states that the new system must be compatible with related NATO equipments. In this case keep the NATO standardization requirements since they can always be eliminated at a later date.
- D. Ensure that supportability objectives are identifiable for both operation and support (at all maintenance levels).

PROCESS 101.2.1.1A5 - Develop Supportability Objectives List

OBJECTIVE:

Identify system supportability objectives for the new system equipment based on new technology and improvements over existing systems.

PROCESS 101.2.1.1A5B1 - Review Baseline System and Identify Support Deficiencies

- A. Identify existing system\equipments that are comparable to the new system equipment.
- B. Review test results, sample data collection results, logistic documentation, and field deficiency reports. Identify supportability problems resulting from system design or the existing support concepts.
- C. Categorize the supportability problems by ILS Element or Subelement. Merge this information with the data from Process 101.2.1.1A4.

- D. Review the supportability problems to determine how they can be eliminated in the new system equipment design or support concept.

PROCESS 101.2.1.1A5B2 - Identify Objectives and Organize for Publication

- A. Use information extracted from the requirements documents and comparison system data, to develop a set of supportability objectives. Consolidate the data for each subelement to define supportability objectives under each applicable ILS element.
- B. Supportability objectives are both qualitative and quantitative by nature. Quantitative requirements may reduce annual maintenance manhours by 40% over the old system. While a qualitative requirement is to adapt a parts control program to standardize the parts used in design. This reduces inventory requirements.
- C. Update the data base with the objectives.

PROCESS 101.2.1.1A5B3 - Publish the Draft Objectives

- A. Publish a draft of the objectives developed.
- B. Submit the listing to the authorizing agency for approval and cycle until an approved list is obtained.
- C. Update the database with the approved listing and provide the Program Manager with the status of the project to date.

PROCESS 101.2.1.2 - DEVELOP EARLY LSA STRATEGY

OBJECTIVE:

The objective of this subtask is to use the approved LSA objectives and the data developed and placed in the strategic data base file to select and tailor LSA tasks and subtasks to produce an Early LSA Strategy.

PROCESS 101.2.1.2A1 - Select Critical Parameters

- A. Extract and review data base information in the light of the approved LSA objectives. Identify critical design parameters or maintenance requirements that require special support considerations.
- B. Evaluate data and identify any Program Requirements or known Logistic resource constraints that impact design or LSA requirements decisions (e.g. NDI, fast track program schedules, cost constraints, technological limitations, availability of data from like items in other systems, etc).
- C. Document this information relative to the appropriate supportability objective.

PROCESS 101.2.1.2A2 - Identify Relevant Databases

- A. Identify and evaluate other relevant data bases, if any, that could provide source data for LSA task performance. For example, Safety Files, Contract Performance files, Technical Manuals, Quality Deficiency or Sample Data Collection files for like items.
- B. Review for applicability to the current system equipment and determine if the data is not applicable, needs updating, or satisfies a supportability objective as is. Where data satisfies a supportability objective, eliminate the requirement.
- C. Establish with the proponents of selected data bases, the procedures for data extraction and mode of data transmittal necessary to keep data bases current.
 - 1. Match supportability objectives to data bases selected.
 - 2. Evaluate available data for adequacy and applicability.
 - 3. Develop data extraction process.
 - 4. Update the strategic data base with any additional data and cycle until satisfactory

PROCESS 101.2.1.2A3 - Identify LSA Tasks and Subtasks

- A. Utilizing the supportability objectives that were identified in the previous process and the data from similar and /or equivalent systems. Select LSA Tasks and Subtasks whose results accomplish the supportability objectives.
- B. Develop a rationale for selecting each LSA Task and Subtask. The rationale should contain what the expected task results and the supportability objectives satisfied.
- C. Develop a draft LSA Strategy using the required data item descriptions. Cycle until approved by approving authority.

PROCESS 101.2.1.2A4 - Develop Cost and Time Estimates for LSA Tasks

- A. Ensure that the tasks/subtasks developed are supportable by available ILS funds.
- B. For each candidate task and subtask, identify the level of LSA effort to be performed.
- C. Determine the costs and schedules associated with the task list. Use the CELSA Guide for this determination.
- D. Assure that the LSA strategy conforms to the acquisition schedule or that the schedule is revised accordingly. Additionally, review to determine that schedule coincides with project milestones.
- E. Identify the LSA control numbering system to be employed. AMC PAM 700-11
- F. Incorporate cost and time estimates together with other related data into the LSA Strategy for approval. Cycle, correct and modify them until approved.

PROCESS 101.2.1.2A5 - Perform Trade-Off Analysis

- A. Perform trade-off analysis of manpower, skill or funding constraints to establish Cost Effective LSA tasks to achieve supportability objectives. The trade-off balances the cost of performing the task against either improvements in readiness or reductions in life cycle

cost and logistic resource requirements. Supportability factors include maintenance, design, standardization, RAM, O&S costs, operational approaches, and logistic support resources. Finalize the Early Strategy draft concepts by:

1. Listing acceptable and approved supportability objectives.
2. Identifying LSA tasks required to achieve supportability objectives. Determine what effect the task has on supportability, cost or readiness. Apply available modeling techniques to make this determination. Eliminate any task that does not provide a good return on investment (e.g., tasks that have a small or no impact on supportability, cost, or readiness).
3. Develop a schedule for performing the tasks. Eliminate any tasks whose result will not be available at the appropriate point in the life cycle phase.
4. Identify and assign LSA tasks to responsible authorities.
5. Identify resource requirements by task. Identify any shortfall.
6. Update the data base and publish the results consisting of:
 - a. Purpose
 - b. System Identification (Narrative description)
 - c. Supportability Objectives (from 101.2.1.2A1-1D (2))
 - i. Design Influence Factors
 - ii. Maintenance Plan (Concept)
 - iii. Manpower & Personnel
 - iv. Supply Support Concept
 - v. Support Equipment and TMDE Objectives
 - vi. Training & Training Devices Requirements
 - vii. Computer Resources Support Concept
 - viii. Transportation and Transportability Parameters/Limitations
 - ix. Standardization and Interoperability Objectives
 - x. Other Supportability Objectives (if any).

PROCESS 101.2.1.3 - IDENTIFY SPECIFIC SUPPORT FACTORS

OBJECTIVE:

The objective of this process is to establish a program review technique to assure that supportability objectives remain consistent with program development goals that are within resource constraints and provide an adequate return on investment.

This review will take place when requirements change and tasks are added/deleted/modified by the Program Manager or when deficiencies are eliminated or corrected. Adherence to this process by the LSA Review team (AMC PAM 700-11) will assure the broadest technical review and facilitate communication of program status. The review period should be established based on the volatility of the system with consideration given to manpower resource availability.

PROCESS 101.2.1.3A1 - Review Program Support Factors

- A. When determining how to correct or eliminate a program deficiency, review program documentation, policy documents and design characteristics to qualify and quantify supportability factors associated with the development program. Also review data available from the strategic data base file.
- B. Assess the inherent R&M characteristics of alternative designs considered in the program. Discard designs indicating excessive inherent weaknesses in the R&M or which require specific contractor corrective action.
- C. Determine testability characteristics of the system. If not testable or provable, the testability or performance parameters are probably not realistic. Modify characteristics goals as required.
- D. As dimensional data is received, evaluate transportability objectives to determine feasibility of meeting transportability goals.
- E. Evaluate accumulating data on ILS related O&S costs. Adjust goals or resources as conditions dictate.

- F. As development progresses, identify and track system characteristics influencing support requirements and planning. When system characteristics indicate detrimental impact to R&M, cost, schedule, operability, etc., flag conditions for initiation of corrective action.
- G. When planned or required logistic resources are not available, either in manpower, funds or equipment (including facilities), identify impact and recommended course of action. Such course(s) of action, depending on the system involved, could range from simple program changes, to reduction of LSA data acquisition, to program cancellation.
- H. Review the maintenance concept. Are the maintenance, provisioning, cataloging and acquisition plans all supportive of the stated concept? Revise the concept if unrealistic, based on emerging program data generation.
- I. Determine if the supply support concept is still valid. Assure that the supply system/provisioning requirements support the approved concept.
- J. Analyze R&M data generated and develop estimates of achievable R&M. Adjust the LSA strategy accordingly.
- K. Collectively analyze the LSA data generated. Assess the effectiveness of the proposed operational approach. Prepare operational impact statements for TRADOC/Materiel Developer review, as required.
- L. When facilities are impacted, review the facilities engineering plans/proposals. If such plans/proposals are inconsistent with test/fielding schedules, advise the Materiel Developer/TRADOC and or Major Commands of problems requiring corrective action.

PROCESS 101.2.1.3A2 - Identify Qualifying and Quantifying Specifics

- A. Review program documentation, policy documents, and program objectives to qualify and quantify the supportability objectives. Review the data available in Strategic Data Base. As more information becomes available and the design matures, the supportability objectives become more definitive.

1. Update the early LSA strategy data base as new data becomes available.
2. Update list of supportability objectives which may include:
 - a. Life Cycle Economic Support goals
 - b. Reliability, Availability, and Maintainability goals
 - c. Total Resource Requirement goals (personnel, funds and materiel)
 - d. Standardization and Interoperability goals.
3. LSA review team evaluate LSA task performance toward meeting objectives. Provide input to respective data bases for specific functional areas as applicable. (AMC Pamphlet 700-11.)

PROCESS 101.2.1.4 - UPDATE THE LSA STRATEGY

OBJECTIVE:

The objective of this task is to revise the LSA Strategy as new data becomes available. Usually this process is accomplished once a year. Based on additional information and a maturing system design, the supportability objectives are revised. The revision of the supportability objectives causes a review of the LSA Tasks and Subtasks to be performed.

PROCESS 101.2.1.4A1 - Compare Tasks to AMC/TRADOC Mission/Functions

- A. Review all LSA Tasks and Subtasks and identify which Command Material Developer or TRADOC will be responsible for accomplishing each task. Ref AR 700-127, Table F1.

PROCESS 101.2.1.4A2 - Identify and Assign Tasks

- A. From the results of Process 101.2.1.3A2 and the life cycle phase identify the next set of LSA Tasks and Subtasks required to meet the supportability objective.
- B. Develop a rationale for performing the task, determine the expected results and identify the supportability objectives that are to be accomplished.

- C. Assign responsibility for task performance to the appropriate agency.

PROCESS 101.2.1.4A3 - Develop LSA Costs and Schedules

- A. Determine cost estimates for each identified task and subtask using the CELSA guide.
- B. Perform a trade-off analysis to determine if the cost of performing the task causes a significant reduction in life cycle cost, logistic resource requirements or improves operational availability.
- C. Modify LSA Tasks or Subtasks to meet the milestone schedule or revise the program milestone schedule as necessary.
- D. Cycle the cost and schedule constraints until they are resolved and an acceptable cost and schedule are approved. This becomes the final LSA Strategy. Update the base with this information and provide the Program Manager with this status.
- E. Publish the Final Strategy.

PROCESS 101.2.1.5 - PREPARE THE ILSP INPUTS

OBJECTIVE:

The objective of this process is to ensure that those responsible for preparing the supportability and supportability related inputs for the ILS plan have the required information.

- A. Provide access to the strategic data base including all updates to logistics elements responsible for preparing ILSPs.
- B. Provide the LSA Strategy, Supportability Objectives and related updates to logistics elements responsible for preparing ILSPs.

ANNEX D



**LSA TASK 101
VERT APPLICATION METHODOLOGY**

VERT APPLICATION METHODOLOGY

BACKGROUND:

Venture Evaluation and Review Technique (VERT) was developed as a network analysis technique to facilitate management decision making. It allows a systematic planning and control of programs and enables managers to find solutions to real life managerial problems.

The terms of the APJ contract require the provision of batch files for each of the VERT networks associated with the various Data Flow Diagrams in the APJ 966 projects.

APJ has been successful in adapting a method for the creation of these networks using the existing EXCELERATOR software package and establishing a naming convention compatible with that used in the Data Flow Diagrams. To do this APJ has made use of the PC model of VERT. A Structured Analysis project was used for this purpose. The prototype VERT network structure was made for one top level and one lower level data flow diagram.

The PC model of VERT has certain limitations built into it. To overcome some of these limitations, certain conventions were used to create the input files. To maintain full generality a set of "dummy" default values were established. The model allows the user to alter the default values of time, cost, and performance to satisfy their specific requirements.

METHODOLOGY:

The basic symbols used to structure the network are:

- (i) **SQUARES** - to indicate NODES. These are decision points in the project, or points beyond which the project cannot proceed unless certain criteria are met. There are three types of nodes: one supports input operations, the second supports output operations, and the third supports both input and output operations.
- (ii) **LINES** - to indicate ARCS which are activities that have time, cost, and performance criteria associated with them.

In practice, however, both the arcs and nodes are similar, in that both have time, cost, and performance criteria associated with them. The arcs have a primary and a cumulative set of time, cost, and performance criteria whereas the nodes have only a single cumulative set.

- (iii) **NAMING CONVENTIONS** - Efforts have been made to keep the naming convention as compatible as possible to the Data Flow Diagrams. The naming convention used is displayed below.

NODES - All nodes are prefixed with the letter N. The individual Nodes are identified by a number and a letter. The number refers to the number of the node within the diagram and the letter refers to the diagram number in the project. In the event that a node has been referenced in an earlier diagram they also carry the number of the node in the earlier diagram as a prefix to the individual node number.

N2.4A

- N** - All nodes are prefixed with the letter N
- 2** - Gives the number of the node it relates to in a higher level diagram or an earlier data flow diagram within the project. In this case it refers to node N2 of the top level diagram.
- 4** - Gives the number of the node in the present VERT network diagram.
- A** - The nodes in each subsequent explosion are allotted an alphabetical suffix indication the number of the explosion diagram in the particular project. In this case it is the first lower level diagram within the project.

ARCS - All arcs are prefixed with either the letter C or E. The individual Arcs are identified by two numbers. The first number refers to the number of the arc within the diagram and the second number refers to the number of the diagram within the project. In the event that an arc has been referenced in an earlier diagram they also carry the number of the arc in the earlier diagram as a prefix to the individual arc number. The arcs which are identified by the letter E have direct reference to a process in the corresponding data flow diagram and as such are named the same as the process itself.

- C - All arcs are prefixed with the letter C. In some cases, however, arcs carry a prefix of E. These particular arcs correspond to a process within the data flow diagram and are thus named the same as the process itself.
- 3.3- Gives the number of the arc it relates to in a higher level diagram or an earlier data flow diagram within the project. In this case it refers to arc number 3 in lower level diagram #3 within the project.
- 8.4- Indicates that this particular arc is the #8 arc in the #4 lower level diagram of the project.

BATCH FILES

- INPUT FILES - The input file names are given the extension *.IN.
- OUTPUT FILES - The simulation output files are given the extension *OU.
- PRINT FILES - The print files have been given the extension *.PR.

(This would allow subsequent updates of the input files to be numbered as IN1..., OU1..., PR1... etc.)

DEFAULT SETTINGS:

Control Record:

- (i) The output option selected is "O" which provides a detailed listing, and high level of summary information.
- (ii) The input record listing option selected is "O" which prints all input records.
- (iii) The composite terminal node output option selected is "16" which assumes family mode and intrafamily transfer of histogram data.
- (iv) The number of interactions used are "10" in the demonstration model to facilitate operation in the debug mode if required.
- (v) The composite node name and the network name are left as blanks.

- (vi) In the run identification the name of the corresponding Data Flow Diagram is used as identification for the network description.

Arc Records:

- (i) For each arc, the following records are provided:
 - (a) Master Arc Record
 - (b) Time Distribution Satellite
 - (c) Cost Distribution Satellite
 - (d) Performance Distribution Satellite
- (ii) The Distribution Satellite Records are created to provide a uniform statistical distribution.
- (iii) The default values used for the minimum and maximum in each criteria are:

TIME	10.0	10.0
COST	10.0	100.0
PERFORMANCE	10.0	50.0

Node Records:

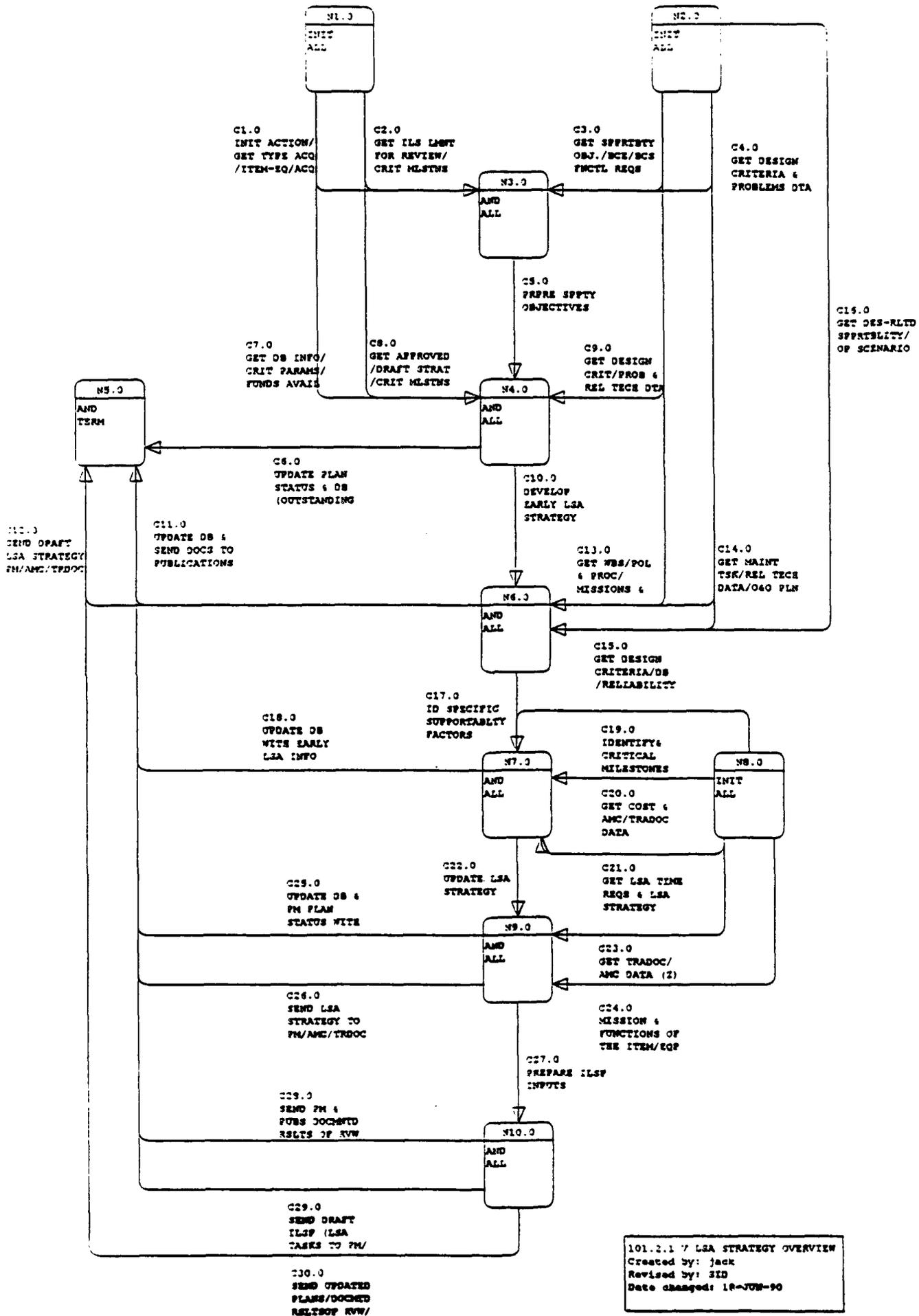
- (i) Input Logic - The input logic for the nodes are either "INITIAL" or "AND".
- (ii) Output Logic - The output logic has been defaulted to "ALL" or "TERMINAL".
- (iii) The output option indicator and the storage option indicator are defaulted to read "0".
- (iv) The node description has also been left blank.

(It is again noted that the user can change the default values to desired values as identified by the particular requirement and applications.)

DOCUMENTATION:

With every project report, APJ will be providing the following documents relating to the VERT:

- (i) A VERT network diagram corresponding to a particular data flow diagram.
- (ii) A print-out of the VERT network inputs for the particular data flow diagrams.
- (iii) A floppy disc containing the sample input, print and the simulation output files for the default VERT network.



101.2.1.7 LSA STRATEGY OVERVIEW
 Created by: jack
 Revised by: SID
 Date changed: 1R-JUN-90

1234567890123456789012345678901234567890123456789012345678901234567890

	1	2	3	4	5	6	7	8
1. 0016	10							
			LSA EARLY STRATEGY DEVELOPMENT - OVERVIEW					
	+	+	+	+	+	+	+	+
2. C1.0	N1.0	N3.0	1.0 INITIATE ACTION/GET TYPE ACQ/ACQ ITM-EQP/ACQ APPLIC					
3. C1.0	DTIME 1		2	10.0	20.0			
4. C1.0	DCOST 1		2	10.0	100.0			
5. C1.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
6. C2.0	N1.0	N3.0	1.0 GET LSA TASKS/SUBTASKS REQ & CRITICAL MLSTNS DATA					
7. C2.0	DTIME 1		2	10.0	20.0			
8. C2.0	DCOST 1		2	10.0	100.0			
9. C2.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
10. C3.0	N2.0	N3.0	1.0 GET SPRTBLTY OBJCTVS/BCE/BCS/FUNCT'L REQS.					
11. C3.0	DTIME 1		2	10.0	20.0			
12. C3.0	DCOST 1		2	10.0	100.0			
13. C3.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
14. C4.0	N2.0	N3.0	1.0 GET DESIGN CRITERIA & PROBLEMS DATA.					
15. C4.0	DTIME 1		2	10.0	20.0			
16. C4.0	DCOST 1		2	10.0	100.0			
17. C4.0	DTIME 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
18. C5.0	N3.0	N4.0	1.0 PREPARE SUPPORTABILITY OBJECTIVES					
19. C5.0	DTIME 1		2	10.0	20.0			
20. C5.0	DCOST 1		2	10.0	100.0			
21. C5.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
22. C6.0	N4.0	N5.0	1.0 UPDT PLAN STATUS/DB WITH OUTSTANDING DEFICIENCIES					
23. C6.0	DTIME 1		2	10.0	20.0			
24. C6.0	DCOST 1		2	10.0	100.0			
25. C6.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
26. C7.0	N1.0	N4.0	1.0 GET DB INFO/CRIT PARAMS & FUNDS AVAIL FOR LSA TASKS					
27. C7.0	DTIME 1		2	10.0	20.0			
28. C7.0	DCOST 1		2	10.0	100.0			
29. C7.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
30. C8.0	N1.0	N4.0	1.0 GET APPROVED LSA STRAT/DRAFT STRAT/CRIT MILESTONES					
31. C8.0	DTIME 1		2	10.0	20.0			
32. C8.0	DCOST 1		2	10.0	100.0			
33. C8.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
34. C9.0	N2.0	N4.0	1.0 GET DSGN CRITERIA/PROBLMS & RELEVANT TECHNICAL DATA					
35. C9.0	DTIME 1		2	10.0	20.0			
36. C9.0	DCOST 1		2	10.0	100.0			
37. C9.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
38. C10.0	N4.0	N6.0	1.0 DEVELOP EARLY LSA STRATEGY					
39. C10.0	DTIME 1		2	10.0	20.0			
40. C10.0	DCOST 1		2	10.0	100.0			
41. C10.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+
42. C11.0	N6.0	N5.0	1.0 UPDATE DB/SEND DCC. RSLTS OF RVWS/ANALS TO PUBS					
43. C11.0	DTIME 1		2	10.0	20.0			
44. C11.0	DCOST 1		2	10.0	100.0			
45. C11.0	DPERF 1		2	10.0	50.0			
	+	+	+	+	+	+	+	+

	1	2	3	4	5	6	7	8
46.	C12.0	N6.0	N5.0	1.0	SEND DRAFT LSA STRATEGY TO APPROVING AUTHORITY			
47.	C12.0	DTIME 1	2	10.0	20.0			
48.	C12.0	DCOST 1	2	10.0	100.0			
49.	C12.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
50.	C13.0	N2.0	N6.0	1.0	GET WBS/POL & PROC/MISSIONS & FNCTNS OF ITEM/EQMNT			
51.	C13.0	DTIME 1	2	10.0	20.0			
52.	C13.0	DCOST 1	2	10.0	100.0			
53.	C13.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
54.	C14.0	N2.0	N6.0	1.0	GET MAINT TSKS & RES/RELEVANT TECH/O&O PLAN DATA			
55.	C14.0	DTIME 1	2	10.0	20.0			
56.	C14.0	DCOST 1	2	10.0	100.0			
57.	C14.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
58.	C15.0	N2.0	N6.0	1.0	GET DESIGN CRITERIA/PROBLEMS, DB & RELIABILITY DATA			
59.	C15.0	DTIME 1	2	10.0	20.0			
60.	C15.0	DCOST 1	2	10.0	100.0			
61.	C15.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
62.	C16.0	N2.0	N6.0	1.0	GET DSGN RELATED SPPTBLTY/OPERATIONAL SCENARIO DTA			
63.	C16.0	DTIME 1	2	10.0	20.0			
64.	C16.0	DCOST 1	2	10.0	100.0			
65.	C16.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
66.	C17.0	N6.0	N7.0	1.0	IDENTIFY SUPPORTABILITY FACTORS			
67.	C17.0	DTIME 1	2	10.0	20.0			
68.	C17.0	DCOST 1	2	10.0	100.0			
69.	C17.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
70.	C18.0	N7.0	N5.0	1.0	UPDATE DATABASE WITH EARLY LSA STRATEGY INFORMATION			
71.	C18.0	DTIME 1	2	10.0	20.0			
72.	C18.0	DCOST 1	2	10.0	100.0			
73.	C18.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
74.	C19.0	N8.0	N7.0	1.0	IDENTIFY CRITICAL MILESTONES DATA			
75.	C19.0	DTIME 1	2	10.0	100.0			
76.	C19.0	DCOST 1	2	10.0	100.0			
77.	C19.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
78.	C20.0	N8.0	N7.0	1.0	GET COST & TRADOC/AMC DATA			
79.	C20.0	DTIME 1	2	10.0	20.0			
80.	C20.0	DCOST 1	2	10.0	100.0			
81.	C20.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
82.	C21.0	N8.0	N7.0	1.0	GET LSA TIME REQS & APPROVED LSA STRATEGY			
83.	C21.0	DTIME 1	2	10.0	20.0			
84.	C21.0	DCOST 1	2	10.0	100.0			
85.	C21.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+
86.	C22.0	N7.0	N9.0	1.0	UPDATE LSA STRATEGY			
87.	C22.0	DTIME 1	2	10.0	20.0			
88.	C22.0	DCOST 1	2	10.0	100.0			
89.	C22.0	DPERF 1	2	10.0	50.0			
		+	+	+	+	+	+	+

90. C23.0 N8.0 N9.0 1.0 GET TRADOC/AMC & MISSIONS/FUNCTIONS OF ITM/EQ DATA

1 2 3 4 5 6 7 8
1234567890123456789012345678901234567890123456789012345678901234567890

NEW NETWORK PAGE 3

1 2 3 4 5 6 7 8
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91. C23.0 DTIME 1 2 10.0 20.0
92. C23.0 DCOST 1 2 10.0 100.0
93. C23.0 DPERF 1 2 10.0 50.0

+ + + + + + +

94. C24.0 N8.0 N9.0 1.0 GET MISSIONS AND FUNCTIONS OF THE ITEM/EQUIPMENT

95. C24.0 DTIME 1 2 10.0 20.0
96. C24.0 DCOST 1 2 10.0 100.0
97. C24.0 DPERF 1 2 10.0 50.0

+ + + + + + +

98. C25.0 N9.0 N5.0 1.0 UPDATE DATABASE & PLAN STATUS WITH FINAL LSA STRAT

99. C25.0 DTIME 1 2 10.0 20.0
100. C25.0 DCOST 1 2 10.0 100.0
101. C25.0 DPERF 1 2 10.0 50.0

+ + + + + + +

102. C26.0 N9.0 N5.0 1.0 SEND LSA STRATEGY TO APPROVING AUTHORITY FOR APPROV

103. C26.0 DTIME 1 2 10.0 20.0
104. C26.0 DCOST 1 2 10.0 100.0
105. C26.0 DPERF 1 2 10.0 50.0

+ + + + + + +

106. C27.0 N9.0 N10.0 1.0 PREPARE ILSP INPUTS

107. C27.0 DTIME 1 2 10.0 20.0
108. C27.0 DCOST 1 2 10.0 100.0
109. C27.0 DPERF 1 2 10.0 50.0

+ + + + + + +

110. C28.0 N10.0 N5.0 1.0 SEND DOCUMENTED RSLTS OF RVW/ANAL TO PM FILE & PUBS

111. C28.0 DTIME 1 2 10.0 20.0
112. C28.0 DCOST 1 2 10.0 100.0
113. C28.0 DPERF 1 2 10.0 50.0

+ + + + + + +

114. C29.0 N10.0 N5.0 1.0 SEND DRAFT ILSP (LSA TASKS) TO APPROVING AUTHORITY

115. C29.0 DTIME 1 2 10.0 20.0
116. C29.0 DCOST 1 2 10.0 100.0
117. C29.0 DPERF 1 2 10.0 50.0

+ + + + + + +

118. C30.0 N10.0 N5.0 1.0 SEND UPDATED PLNS & DOCUMENTED RESULTS OF RVW TO PM

119. C30.0 DTIME 1 2 10.0 20.0
120. C30.0 DCOST 1 2 10.0 100.0
121. C30.0 DPERF 1 2 10.0 50.0

+ + + + + + +

122. ENDARC

+ + + + + + +

123. N1.0 1 2 0 0

+ + + + + + +

124. N3.0 2 2 0 0

+ + + + + + +

125. N2.0 1 2 0 0

+ + + + + + +

126. N4.0 2 2 0 0

+ + + + + + +

127. N5.0 2 1 0 0

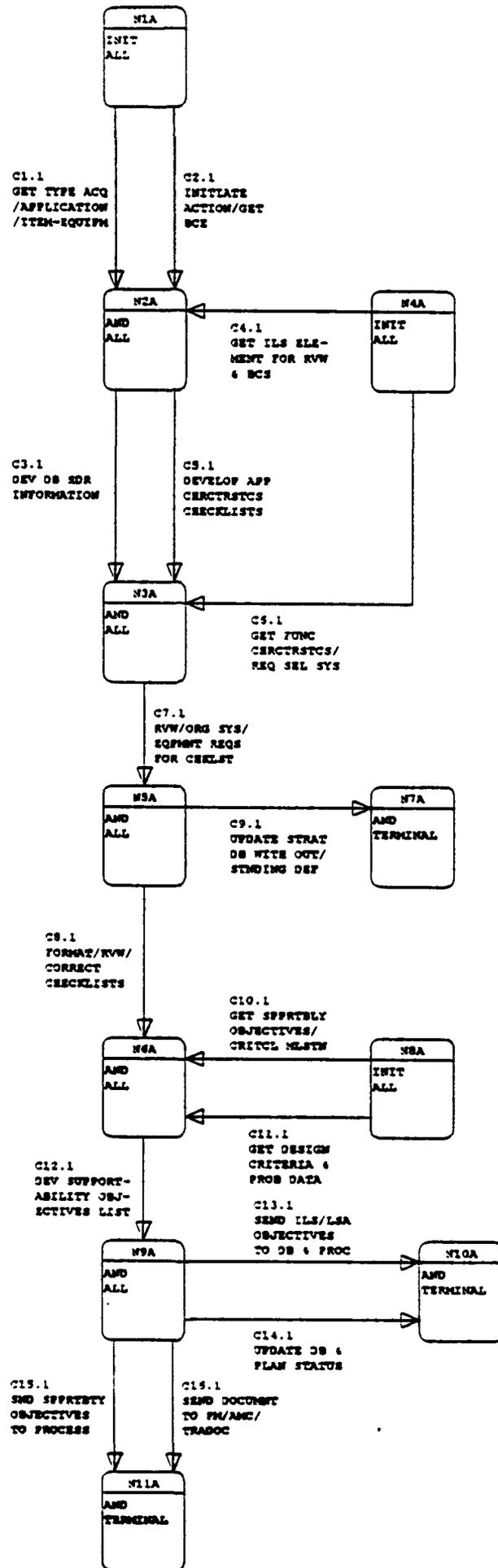
+ + + + + + +

128. N6.0 2 2 0 0

+ + + + + + +

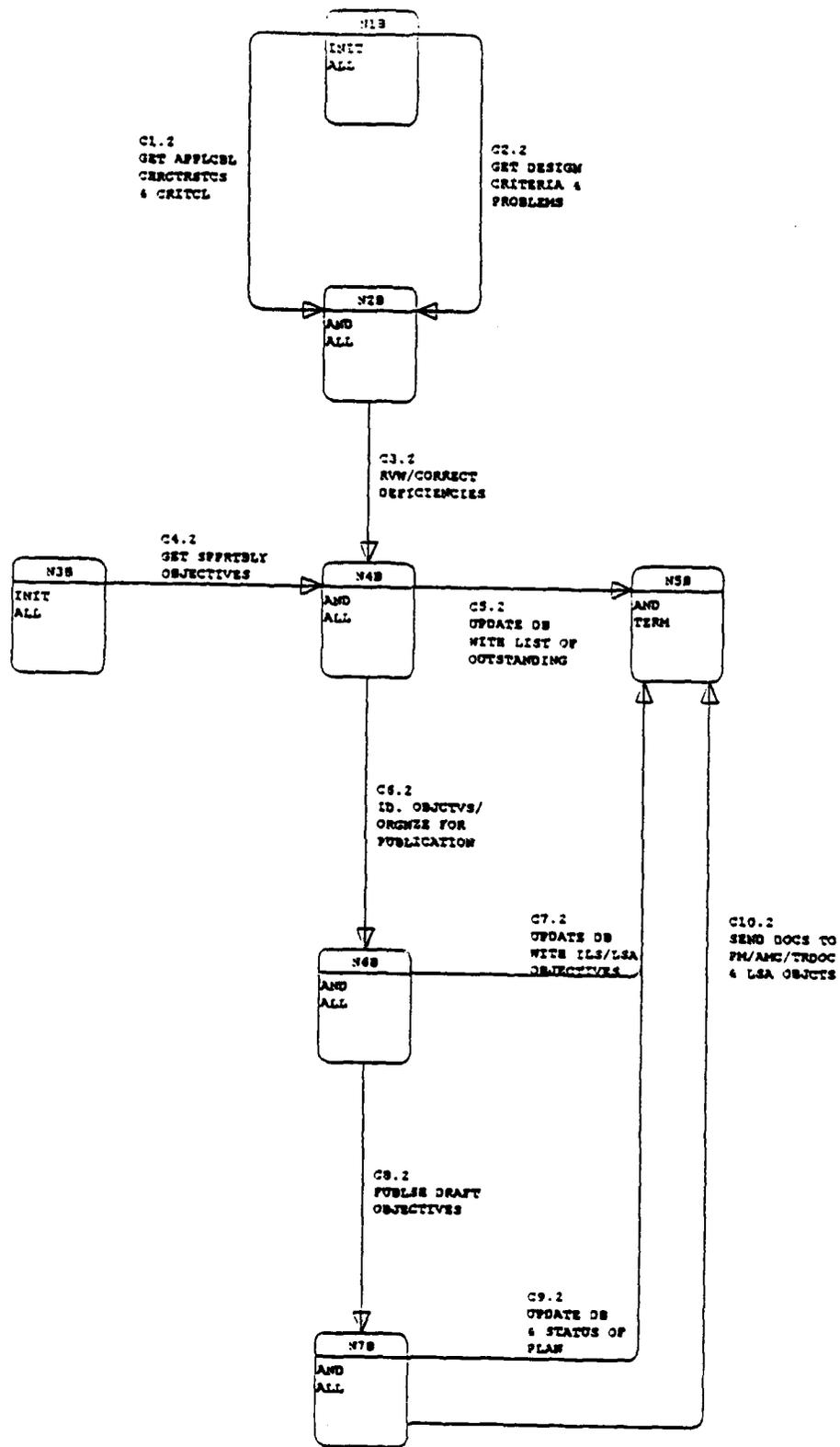
129. N7.0 2 2 0 0

	+	+	+	+	+	+	+	+
130. N8.0	1	2	0	0				
	+	+	+	+	+	+	+	+
	1	2	3	4	5	6	7	8
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1	NEW NETWORK			PAGE 4				
	1	2	3	4	5	6	7	8
	123456789012345678901234567890123456789012345678901234567890							
131. N9.0	2	2	0	0				
	+	+	+	+	+	+	+	+
132. N10.0	2	2	0	0				
	+	+	+	+	+	+	+	+
133. ENDNODE								
	1	2	3	4	5	6	7	8
	123456789012345678901234567890123456789012345678901234567890							



101.2.1.1A V PREP LSA OBJECTIVES
 Created by: JID
 Revised by: SID
 Date changed: 24-MAY-70

46.	C12.1	N6A	N9A	1.0	DEVELOP	SUPPORTABILITY	OBJECTIVES	LIST										
47.	C12.1	DTIME	1	2	10.0	20.0												
48.	C12.1	DCOST	1	2	10.0	100.0												
49.	C12.1	DPERF	1	2	10.0	50.0												
		+	+		+	+												
50.	C13.1	N9A	N10A	1.0	SEND	ILS/LSA	OBJECTIVES	TO DB & PROCESS	101.2.1.2A									
51.	C13.1	DTIME	1	2	10.0	20.0												
52.	C13.1	DCOST	1	2	10.0	100.0												
53.	C13.1	DPERF	1	2	10.0	50.0												
		+	+		+	+												
54.	C14.1	N9A	N10A	1.0	UPDATE	DATABASE	AND	PLAN	STATUS									
55.	C14.1	DTIME	1	2	10.0	20.0												
56.	C14.1	DCOST	1	2	10.0	100.0												
57.	C14.1	DPERF	1	2	10.0	50.0												
		+	+		+	+												
58.	C15.1	N9A	N11A	1.0	SEND	SUPPORTABILITY	OBJECTIVES	TO PROCESS	101.2.1.3									
59.	C15.1	DTIME	1	2	10.0	20.0												
60.	C15.1	DCOST	1	2	10.0	100.0												
61.	C15.1	DPERF	1	2	10.0	50.0												
		+	+		+	+												
62.	C16.1	N9A	N11A	1.0	SEND	DOCUMENTS	TO	PM/AMC/TRADOC										
63.	C16.1	DTIME	1	2	10.0	20.0												
64.	C16.1	DCOST	1	2	10.0	100.0												
65.	C16.1	DPERF	1	2	10.0	50.0												
		+	+		+	+												
66.	ENDARC																	
		+	+		+	+												
67.	N1A	1	2 0 0															
		+	+		+	+												
68.	N2A	2	2 0 0															
		+	+		+	+												
69.	N4A	1	2 0 0															
		+	+		+	+												
70.	N3A	2	2 0 0															
		+	+		+	+												
71.	N5A	2	2 0 0															
		+	+		+	+												
72.	N6A	2	2 0 0															
		+	+		+	+												
73.	N7A	2	1 0 0															
		+	+		+	+												
74.	N8A	1	2 0 0															
		+	+		+	+												
75.	N9A	2	2 0 0															
		+	+		+	+												
76.	N10A	2	1 0 0															
		+	+		+	+												
77.	N11A	2	1 0 0															
		+	+		+	+												
78.	ENDNODE																	



101.2.1.LASB 7 ID/PUB OBJCTVS
 Created by: Jack
 Revised by: Jack
 Date changed: 18-MAY-90

1 2 3 4 5 6 7 8
 1234567890123456789012345678901234567890123456789012345678901234567890

	1	2	3	4	5	6	7	8
1. 0016 10								
	IDENTIFY & PUBLISH OBJECTIVES							
	+	+	+	+	+	+	+	+
2. C1.2	N1B	N2B	1.0	GET LIST OF APPLCBL CHRCTRSTCS/CRITICAL MILESTONES				
3. C1.2	DTIME	1	2	10.0	20.0			
4. C1.2	DCOST	1	2	10.0	100.0			
5. C1.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
6. C2.2	N1B	N2B	1.0	GET DESIGN CRITERIA & PROBLEMS DATA				
7. C2.2	DTIME	1	2	10.0	20.0			
8. C2.2	DCOST	1	2	10.0	100.0			
9. C2.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
10. C3.2	N2B	N4B	1.0	REVIEW AND CORRECT DEFICIENCIES				
11. C3.2	DTIME	1	2	10.0	20.0			
12. C3.2	DCOST	1	2	10.0	100.0			
13. C3.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
14. C4.2	N3B	N4B	1.0	GET SUPPORTABILITY OBJECTIVES				
15. C4.2	DTIME	1	2	10.0	20.0			
16. C4.2	DCOST	1	2	10.0	100.0			
17. C4.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
18. C5.2	N4B	N5B	1.0	UPDATE DATABASE WITH LIST OF OUTSTANDING DEFICIENCIES				
19. C5.2	DTIME	1	2	10.0	20.0			
20. C5.2	DCOST	1	2	10.0	100.0			
21. C5.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
22. C6.2	N4B	N6B	1.0	IDENTIFY OBJECTIVES & ORGANIZE FOR PUBLICATION				
23. C6.2	DTIME	1	2	10.0	20.0			
24. C6.2	DCOST	1	2	10.0	100.0			
25. C6.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
26. C7.2	N6B	N5B	1.0	UPDATE DATABASE WITH ILS/LSA OBJECTIVES				
27. C7.2	DTIME	1	2	10.0	20.0			
28. C7.2	DCOST	1	2	10.0	100.0			
29. C7.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
30. C8.2	N6B	N7B	1.0	PUBLISH DRAFT OBJECTIVES				
31. C8.2	DTIME	1	2	10.0	20.0			
32. C8.2	DCOST	1	2	10.0	100.0			
33. C8.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
34. C9.2	N7B	N5B	1.0	UPDATE DATABASE & STATUS OF PLAN				
35. C9.2	DTIME	1	2	10.0	20.0			
36. C9.2	DCOST	1	2	10.0	100.0			
37. C9.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
38. C10.2	N7B	N5B	1.0	SEND DOCUMENTED RSLTS TO PUBS/ILS/LSA OBJ>101.2.1.1A4				
39. C10.2	DTIME	1	2	10.0	20.0			
40. C10.2	DCOST	1	2	10.0	100.0			
41. C10.2	DPERF	1	2	10.0	50.0			
	+	+	+	+	+	+	+	+
42. ENDARC								
	+	+	+	+	+	+	+	+
43. N1B	1	2	3	4	5	6	7	8
	+	+	+	+	+	+	+	+
	1	2	3	4	5	6	7	8

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NEW NETWORK

PAGE 2

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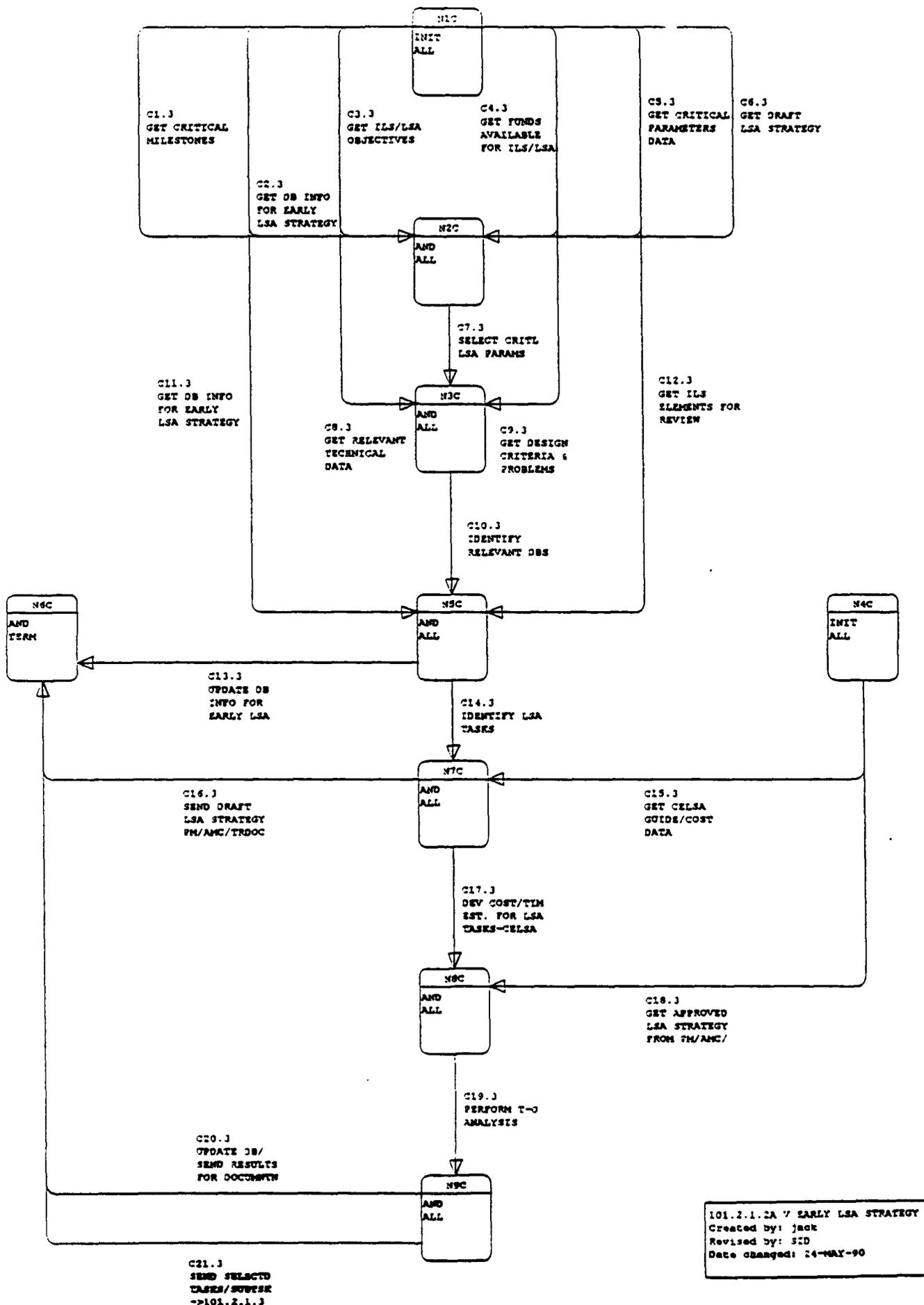
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44. N2B	2	2	0	0				
	+	+	+	+	+	+	+	+
45. N4B	2	2	0	0				
	+	+	+	+	+	+	+	+
46. N3B	1	2	0	0				
	+	+	+	+	+	+	+	+
47. N5B	2	1	0	0				
	+	+	+	+	+	+	+	+
48. N6B	2	2	0	0				
	+	+	+	+	+	+	+	+
49. N7B	2	2	0	0				
	+	+	+	+	+	+	+	+

50. ENDNODE

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101.2.1.2A V EARLY LSA STRATEGY
 Created by: jack
 Revised by: SID
 Date changed: 24-MAY-90

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1	2	3	4	5	6	7	8	
1.	0016	10	EARLY LSA STRATEGY					
	-	+	+	+	+	+	+	
2.	C1.3	NIC N2C	1.0 GET CRITICAL MILESTONES					
3.	C1.3	DTIME 1	2	10.0	20.0			
4.	C1.3	DCOST 1	2	10.0	100.0			
5.	C1.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
6.	C2.3	NIC N2C	1.0 GET DATA BASE INFORMATION FOR EARLY LSA STRATEGY					
7.	C2.3	DTIME 1	2	10.0	20.0			
8.	C2.3	DCOST 1	2	10.0	100.0			
9.	C2.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
10.	C3.3	NIC N2C	1.0 GET ILS/LSA OBJECTIVES					
11.	C3.3	DTIME 1	2	10.0	20.0			
12.	C3.3	DCOST 1	2	10.0	100.0			
13.	C3.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
14.	C4.3	NIC N2C	1.0 GET FUNDS AVAILABLE FOR ILS/LSA TASKS DATA					
15.	C4.3	DTIME 1	2	10.0	20.0			
16.	C4.3	DCOST 1	2	10.0	100.0			
17.	C4.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
18.	C5.3	NIC N2C	1.0 GET CRITICAL PARAMETERS DATA					
19.	C5.3	DTIME 1	2	10.0	20.0			
20.	C5.3	DCOST 1	2	10.0	100.0			
21.	C5.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
22.	C6.3	NIC N2C	1.0 GET DRAFT LSA STRATEGY					
23.	C6.3	DTIME 1	2	10.0	20.0			
24.	C6.3	DCOST 1	2	10.0	100.0			
25.	C6.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
26.	C7.3	N2C N3C	1.0 SELECT CRITICAL LSA PARAMETERS					
27.	C7.3	DTIME 1	2	10.0	20.0			
28.	C7.3	DCOST 1	2	10.0	100.0			
29.	C7.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
30.	C8.3	NIC N3C	1.0 GET RELEVANT TECHNICAL DATA					
31.	C8.3	DTIME 1	2	10.0	20.0			
32.	C8.3	DCOST 1	2	10.0	100.0			
33.	C8.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
34.	C9.3	NIC N3C	1.0 GET DESIGN CRITERIA & PROBLEMS DATA					
35.	C9.3	DTIME 1	2	10.0	20.0			
36.	C9.3	DCOST 1	2	10.0	100.0			
37.	C9.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
38.	C10.3	N3C N5C	1.0 IDENTIFY RELEVANT DATA BASES					
39.	C10.3	DTIME 1	2	10.0	20.0			
40.	C10.3	DCOST 1	2	10.0	100.0			
41.	C10.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	
42.	C11.3	NIC N5C	1.0 GET DATA BASE INFORMATION FOR EARLY LSA STRATEGY					
43.	C11.3	DTIME 1	2	10.0	20.0			
44.	C11.3	DCOST 1	2	10.0	100.0			
45.	C11.3	DPERF 1	2	10.0	50.0			
	+	+	+	+	+	+	+	

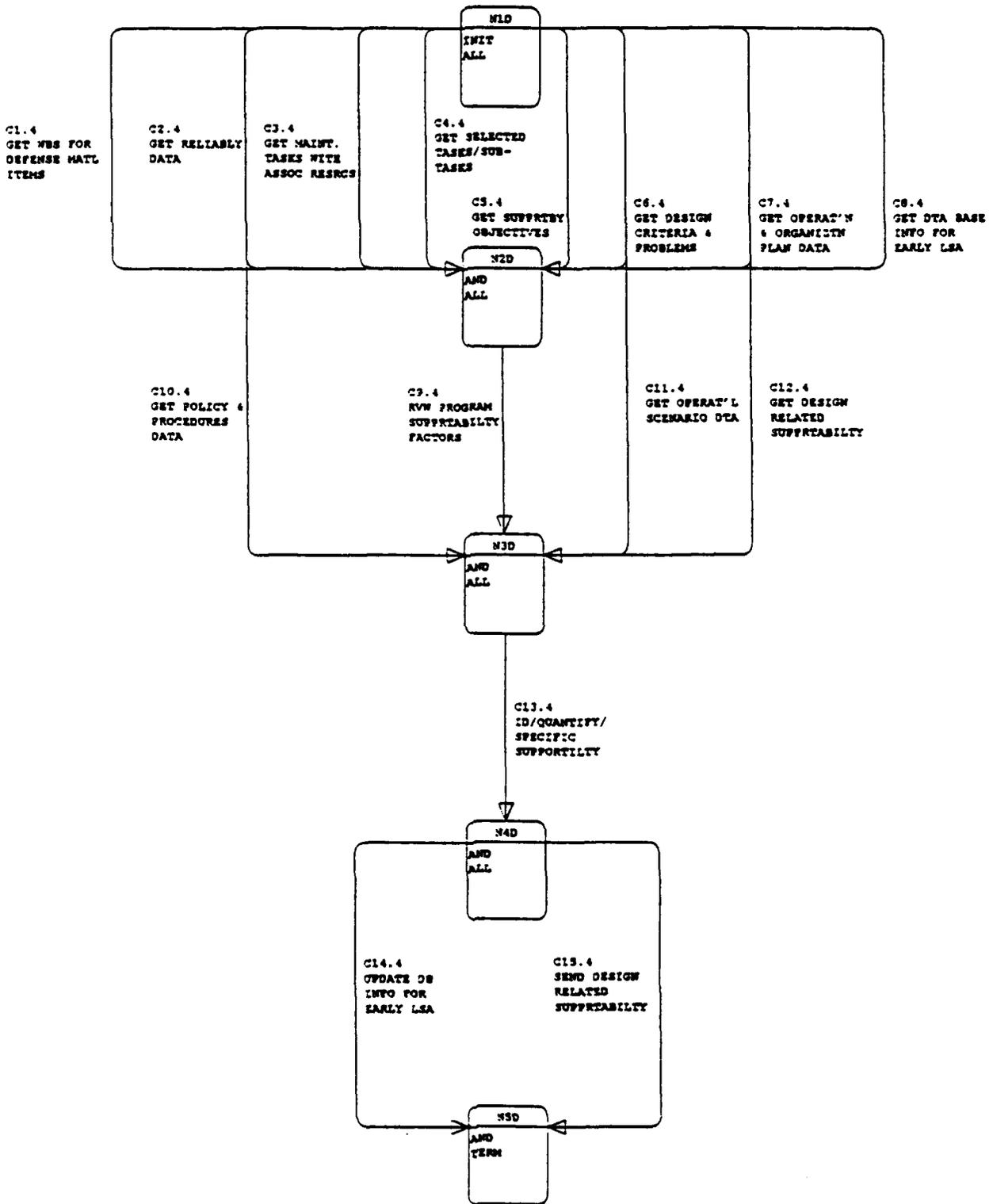
46.	C12.3	N1C	N5C	1.0	GET ILS ELEMENTS FOR REVIEW						
47.	C12.3	DTIME	1	2	10.0	20.0					
48.	C12.3	DCOST	1	2	10.0	100.0					
49.	C12.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
50.	C13.3	N5C	N6C	1.0	UPDATE DATA BASE INFORMATION FOR EARLY LSA STRATEGY						
51.	C13.3	DTIME	1	2	10.0	20.0					
52.	C13.3	DCOST	1	2	10.0	100.0					
53.	C13.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
54.	C14.3	N5C	N7C	1.0	IDENTIFY LSA TASKS						
55.	C14.3	DTIME	1	2	10.0	20.0					
56.	C14.3	DCOST	1	2	10.0	100.0					
57.	C14.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
58.	C15.3	N4C	N7C	1.0	GET CELSA GUIDE AND COST DATA						
59.	C15.3	DTIME	1	2	10.0	20.0					
60.	C15.3	DCOST	1	2	10.0	100.0					
61.	C15.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
62.	C16.3	N7C	N6C	1.0	SEND DRAFT LSA STRATEGY TO PM/AMC/TRADOC						
63.	C16.3	DTIME	1	2	10.0	20.0					
64.	C16.3	DCOST	1	2	10.0	100.0					
65.	C16.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
66.	C17.3	N7C	N8C	1.0	DEVELOP COST/TIME ESTIMATES FOR LSA TASKS (CELSA)						
67.	C17.3	DTIME	1	2	10.0	20.0					
68.	C17.3	DCOST	1	2	10.0	100.0					
69.	C17.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
70.	C18.3	N4C	N8C	1.0	GET APPROVED LSA STRATEGY FROM APPROVAL AUTHORITY						
71.	C18.3	DTIME	1	2	10.0	20.0					
72.	C18.3	DCOST	1	2	10.0	100.0					
73.	C18.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
74.	C19.3	N8C	N9C	1.0	PERFORM TRADE-OFF ANALYSIS						
75.	C19.3	DTIME	1	2	10.0	20.0					
76.	C19.3	DCOST	1	2	10.0	100.0					
77.	C19.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
78.	C20.3	N9C	N6C	1.0	UPDATE DATA BASE AND SEND RESULTS FOR DOCUMENTATION						
79.	C20.3	DTIME	1	2	10.0	20.0					
80.	C20.3	DCOST	1	2	10.0	100.0					
81.	C20.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
82.	C21.3	N9C	N6C	1.0	SEND SELECTED TASKS AND SUBTASKS TO PROC. 101.2.1.3						
83.	C21.3	DTIME	1	2	10.0	20.0					
84.	C21.3	DCOST	1	2	10.0	100.0					
85.	C21.3	DPERF	1	2	10.0	50.0					
		+	+		+	+	+	+	+	+	+
86.	ENDARC										
		+	+		+	+	+	+	+	+	+
87.	N1C	1	2 0 0								
		+	+		+	+	+	+	+	+	+
88.	N2C	2	2 0 0								

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89. N3C	2	2	0	0				
	+		+		+		+	
90. N4C	1	2	0	0				
	+		+		+		+	
91. N5C	2	2	0	0				
	+		+		+		+	
92. N6C	2	1	0	0				
	+		+		+		+	
93. N7C	2	2	0	0				
	+		+		+		+	
94. N8C	2	2	0	0				
	+		+		+		+	
95. N9C	2	2	0	0				
	+		+		+		+	
96. ENDNODE								
	1	2	3	4	5	6	7	8
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101.2.1.1A V IDENT SUPPORT FCTRS
 Created by: Jack
 Revised by: SID
 Date changed: 24-MAY-90

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1. 0016 10

IDENTIFY SUPPORT FACTORS

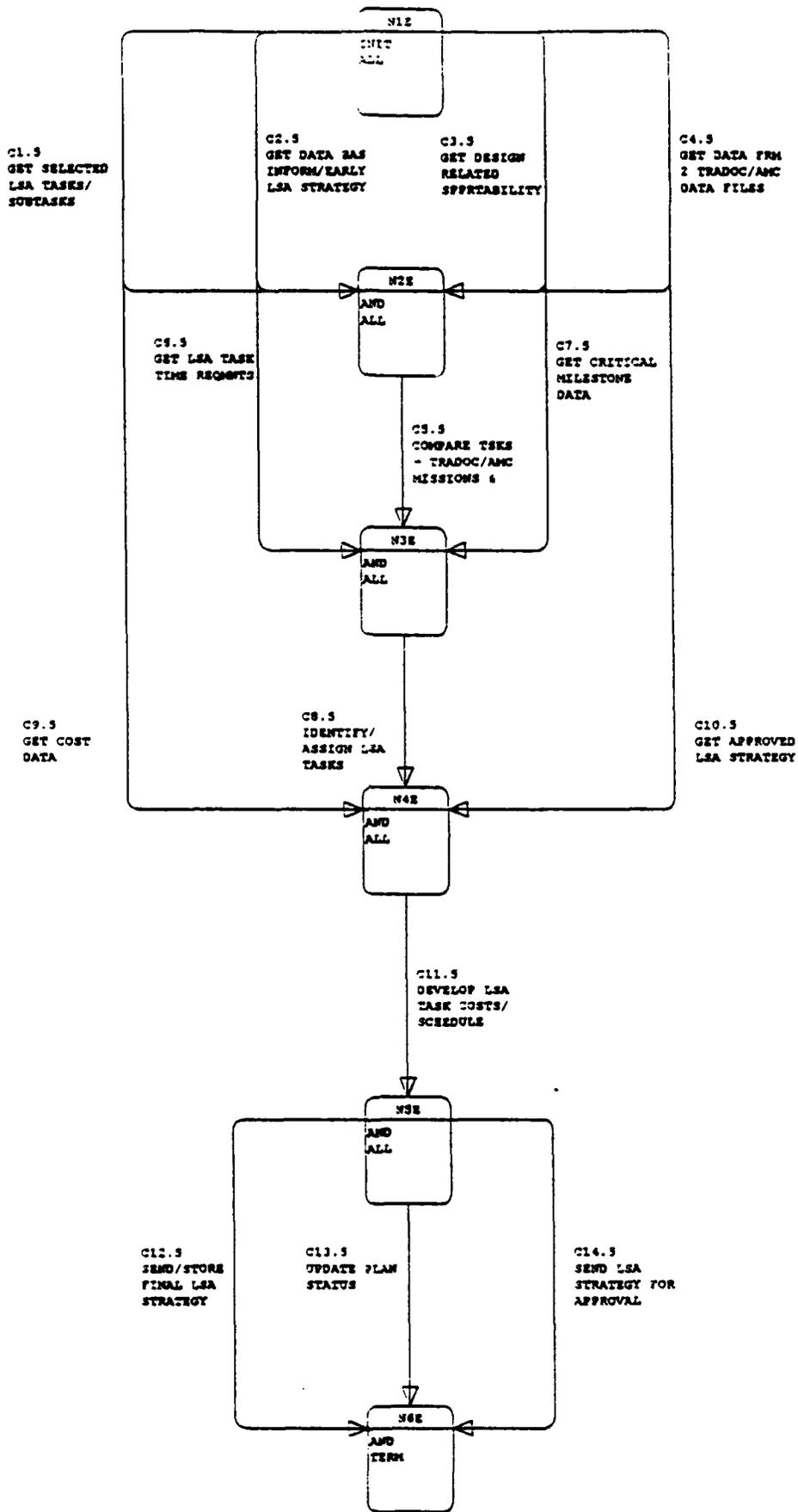
	1	2	3	4	5	6	7	8
2. C1.4	N1D	N2D	1.0 GET WBS FOR DEFENSE MATERIEL ITEM					
3. C1.4	DTIME 1		2	10.0	20.0			
4. C1.4	DCOST 1		2	10.0	100.0			
5. C1.4	DPERF 1		2	10.0	50.0			
6. C2.4	N1D	N2D	1.0 GET RELIABILITY DATA					
7. C2.4	DTIME 1		2	10.0	20.0			
8. C2.4	DCOST 1		2	10.0	100.0			
9. C2.4	DPERF 1		2	10.0	50.0			
10. C3.4	N1D	N2D	1.0 GET MAINTENANCE TASKS WITH ASSOCIATED RESOURCES					
11. C3.4	DTIME 1		2	10.0	20.0			
12. C3.4	DCOST 1		2	10.0	100.0			
13. C3.4	DPERF 1		2	10.0	50.0			
14. C4.4	N1D	N2D	1.0 GET SELECTED LSA TASKS/SUBTASKS					
15. C4.4	DTIME 1		2	10.0	20.0			
16. C4.4	DCOST 1		2	10.0	100.0			
17. C4.4	DPERF 1		2	10.0	50.0			
18. C5.4	N1D	N2D	1.0 GET SUPPORTABILITY OBJECTIVES					
19. C5.4	DTIME 1		2	10.0	20.0			
20. C5.4	DCOST 1		2	10.0	100.0			
21. C5.4	DPERF 1		2	10.0	50.0			
22. C6.4	N1D	N2D	1.0 GET DESIGN CRITERIA & PROBLEMS					
23. C6.4	DTIME 1		2	10.0	20.0			
24. C6.4	DCOST 1		2	10.0	100.0			
25. C6.4	DPERF 1		2	10.0	50.0			
26. C7.4	N1D	N2D	1.0 GET OPERATIONS AND ORGANIZATIONAL (O&O) PLAN DATA					
27. C7.4	DTIME 1		2	10.0	20.0			
28. C7.4	DCOST 1		2	10.0	100.0			
29. C7.4	DPERF 1		2	10.0	50.0			
30. C8.4	N1D	N2D	1.0 GET DATA BASE INFORMATION FOR EARLY LSA STRATEGY					
31. C8.4	DTIME 1		2	10.0	20.0			
32. C8.4	DCOST 1		2	10.0	100.0			
33. C8.4	DPERF 1		2	10.0	50.0			
34. C9.4	N2D	N3D	1.0 REVIEW PROGRAM SUPPORTABILITY FACTORS					
35. C9.4	DTIME 1		2	10.0	20.0			
36. C9.4	DCOST 1		2	10.0	100.0			
37. C9.4	DPERF 1		2	10.0	50.0			
38. C10.4	N1D	N3D	1.0 GET POLICY & PROCEDURES DATA					
39. C10.4	DTIME 1		2	10.0	20.0			
40. C10.4	DCOST 1		2	10.0	100.0			
41. C10.4	DPERF 1		2	10.0	50.0			
42. C11.4	N1D	N3D	1.0 GET OPERATIONAL SCENARIO DATA					
43. C11.4	DTIME 1		2	10.0	20.0			
44. C11.4	DCOST 1		2	10.0	100.0			
45. C11.4	DPERF 1		2	10.0	50.0			

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46. C12.4 N1D N3D 1.0 GET DESIGN RELATED SUPPORTABILITY DATA
47. C12.4 DTIME 1 2 10.0 20.0
48. C12.4 DCOST 1 2 10.0 100.0
49. C12.4 DPERF 1 2 10.0 50.0
+ + + + + + + +
50. C13.4 N3D N4D 1.0 IDENTIFY/QUANTIFY SPECIFIC SUPPORTABILITY OBJECTIVS
51. C13.4 DTIME 1 2 10.0 20.0
52. C13.4 DCOST 1 2 10.0 100.0
53. C13.4 DPERF 1 2 10.0 50.0
+ + + + + + + +
54. C14.4 N4D N5D 1.0 UPDATE DATA BASE INFORMATION FOR EARLY LSA STRATEGY
55. C14.4 DTIME 1 2 10.0 20.0
56. C14.4 DCOST 1 2 10.0 100.0
57. C14.4 DPERF 1 2 10.0 50.0
+ + + + + + + +
58. C15.4 N4D N5D 1.0 SEND DSGN RELATED SPPRTBLTY FCTRS TO PROC 101.2.1.4
59. C15.4 DTIME 1 2 10.0 20.0
60. C15.4 DCOST 1 2 10.0 100.0
61. C15.4 DPERF 1 2 10.0 50.0
+ + + + + + + +
62. ENDARC
+ + + + + + + +
63. N1D 1 2 0 0
+ + + + + + + +
64. N2D 2 2 0 0
+ + + + + + + +
65. N3D 2 2 0 0
+ + + + + + + +
66. N4D 2 2 0 0
+ + + + + + + +
67. N5D 2 1 0 0
+ + + + + + + +
68. ENDNODE
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101.2.1.4A V DEV FINAL STRATEGY
 Created by: jack
 Revised by: SID
 Date changed: 24-MAY-90

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46.	C12.5	NSE	N6E	1.0	SEND & STORE FINAL LSA STRATEGY TO AUTH. & DB				
47.	C12.5	DTIME	1	2	10.0	20.0			
48.	C12.5	DCOST	1	2	10.0	100.0			
49.	C12.5	DPERF	1	2	10.0	50.0			
		+	+	+	+	+	+	+	+
50.	C13.5	NSE	N6E	1.0	UPDATE THE PLAN STATUS				
51.	C13.5	DTIME	1	2	10.0	20.0			
52.	C13.5	DCOST	1	2	10.0	100.0			
53.	C13.5	DPERF	1	2	10.0	50.0			
		+	+	+	+	+	+	+	+
54.	C14.5	NSE	N6E	1.0	SEND LSA STRATEGY TO APPROVING AUTHORITY FOR APPRVL				
55.	C14.5	DTIME	1	2	10.0	20.0			
56.	C14.5	DCOST	1	2	10.0	100.0			
57.	C14.5	DPERF	1	2	10.0	50.0			
		+	+	+	+	+	+	+	+
58.	ENDARC								
		+	+	+	+	+	+	+	+
59.	N1E	1	2	0	0				
		+	+	+	+	+	+	+	+
60.	N2E	2	2	0	0				
		+	+	+	+	+	+	+	+
61.	N3E	2	2	0	0				
		+	+	+	+	+	+	+	+
62.	N4E	2	2	0	0				
		+	+	+	+	+	+	+	+
63.	N5E	2	2	0	0				
		+	+	+	+	+	+	+	+
64.	N6E	2	1	0	0				
		+	+	+	+	+	+	+	+
65.	ENDNODE								
		1	2	3	4	5	6	7	8
		1234567890123456789012345678901234567890123456789012345678901234567890							

ANNEX E
—
STRUCTURED SYSTEMS ANALYSIS
Fundamentals

NOTE: Our presentation of Structured Analysis Fundamentals with the associated figures, is reproduced verbatim in each report herewith.

ANNEX E
STRUCTURED SYSTEMS ANALYSIS

Fundamentals

Structured Systems Analysis (SSA) has recently become an industry standard for generating Data Flow Diagrams (replacing "logic diagrams" or "flow charts") to aid in coordinating the functions to be performed by a computer program and its associated Inputs/Outputs (I/O). During the SSA, each set of "flow charts" can be checked by the potential user to assure that there is complete agreement on what is to be done by the program, and how it is to be accomplished. It also provides considerable flexibility for updating or changing the program.

Six basic elements (see Figure 1) are used in SSA:

1. Process (PRC)
2. Data Flow (DAF)
3. Data Store (DAS)
4. External Entity (EXT)
5. Data Flow Diagram (DFD)
6. Data Dictionary (DCT)

PROCESS (Represented by a Circle):

A function or operation to be performed which can be explained by a set of instructions representing a single task, e.g., "calculate interest on a loan", "prepare a draft report". If the Process description is too complex to describe in a few steps, it may be necessary to develop a lower level description (see below).

DATA FLOW (Lines interconnecting Processes or I/Os):

Each function or Process cannot be a stand-alone in a complex network. To have any meaning in a program, each process must be initiated by a previous action and/or provided information on which to act. Furthermore, a Process must result in an output which is the input to the next logical Process. These inputs, outputs, or initiating actions are identified as Data Flows, and are represented by the Data Flow lines indicating their point of origin and the process to which they provides data.

DATA STORE (Represented by two parallel lines):

Although some Processes generate data used as input to a succeeding Process, there is often a need to "gather or collect" information from files in which it is stored. This information may come from an external source (such as a MIL-STD, Army regulation, historical experience files, etc.), or an internal source or file in which data is temporarily stored for use by succeeding processes. These Data Stores can be visualized as a "file cabinet", in which the data are stored for later retrieval.

EXTERNAL ENTITY (Represented by a Rectangle):

Each program or logical process must have an initiating action, a "point" of disposition of the results, and possible input guidance or instructions. Each of these have authorities, functions, or applications which are independent of, although required by the program Process. Thus, these activities, agencies, or facilities are considered "External Entities" to the program.

DATA FLOW DIAGRAM:

The general arrangement of the above can be readily seen. First, the circle or Process describes what has to be done; the interconnecting lines represent the Data Flows, together with the specific description of all I/Os. The Data Stores identify the source and/or file designation of a data base, and the External Entities represent those activities remote from the Process, which are the source of guidance or the recipients of the program. This combination of Processes, Data Flows, Data Stores, and External Entities constitutes a "Data Flow Diagram". The unique feature of the Data Flow Diagram (DFD) is that each process can be considered independently, permitting a change to be made in one Process without a major change in the overall program.

DATA DICTIONARY:

The Data Dictionary consists of a complete description of each of the basic elements. For the Process, it contains a step-by-step description of what has to be performed. The description of the Data Flow identifies the nomenclature of the data, a detailed description of its content, and its source. The Data Stores and External Entities are described, including possible location.

The Data Dictionary (an evolving document) begins with a description of the first Process and is continually added to as the Data Flow Diagrams are expanded, detailed, and eventually completed.

APPROACH TO PERFORMING STRUCTURED SYSTEM ANALYSIS:

The best approach to Structured Systems Analysis is to assume that the program consists of a series of processes, each of which are to be assigned to an inexperienced analyst. Each analyst is to be walked through the assigned process of the Program, explaining step-by-step what functions have to be performed or what actions have to be taken to accomplish the process. The analyst is also informed where the information is coming from (input Data Flow), what is to be generated by each process (output Data Flow), where the data base may to be found (Data Stores), and who to contact for guidance (External Entities).

The best way to initiate an SSA is to set down the point of origin of a program, its final goal(s), and the intermediate functions or actions needed to get from beginning to goal. Each step should be considered as a Process - some may be sequential and others parallel. Then, the steps needed to accomplish the Process should be described. If the description is complex and needs intermediate steps, the Process is then a candidate for an "explosion". That is, the top (or upper) level Process is considered as a "project" and its own Data Flow Diagram is prepared.

When writing the step-by-step procedures in the Process, certain elements of data (or information) must be made available for the procedure. Each element of data is considered as an input Data Flow, which is identified and described. The product (or result) of a Process is an output Data Flow element.

Each Data Flow to the Process must originate from:

1. an earlier Process
2. a Data Store (or file)
3. an External Entity.

These sources are also identified, described and put into the Data Dictionary. As soon as the last portion of the Data Flow Diagram has been described, the SSA is complete.

The Data Dictionary (an evolving document) begins with a description of the first Process and is continually added to as the Data Flow Diagrams are expanded, detailed, and eventually completed.

APPROACH TO PERFORMING STRUCTURED SYSTEM ANALYSIS:

The best approach to Structured Systems Analysis is to assume that the program consists of a series of processes, each of which are to be assigned to an inexperienced analyst. Each analyst is to be walked through the assigned process of the Program, explaining step-by-step what functions have to be performed or what actions have to be taken to accomplish the process. The analyst is also informed where the information is coming from (input Data Flow), what is to be generated by each process (output Data Flow), where the data base may to be found (Data Stores), and who to contact for guidance (External Entities).

The best way to initiate a SSA is to set down the point of origin of a program, its final goal(s), and the intermediate functions or actions needed to get from beginning to goal. Each step should be considered as a Process - some may be sequential and others parallel. Then, the steps needed to accomplish the Process should be described. If the description is complex and needs intermediate steps, the Process is then a candidate for an "explosion". That is, the top (or upper) level Process is considered as a "project" and its own Data Flow Diagram is prepared.

When writing the step-by-step procedures in the Process, certain elements of data (or information) must be made available for the procedure. Each element of data is considered as an input Data Flow, which is identified and described. The product (or result) of a Process is an output Data Flow element.

Each Data Flow to the Process must originate from:

1. an earlier Process
2. a Data Store (or file)
3. an External Entity.

These sources are also identified, described and put into the Data Dictionary. As soon as the last portion of the Data Flow Diagram has been described, the SSA is complete.

The structured Analysis phase is followed by Structured Design, then by programming and finally software test and validation. The organization of Structured Analysis and its relationship to Structured System Design is shown below on Figure 2.

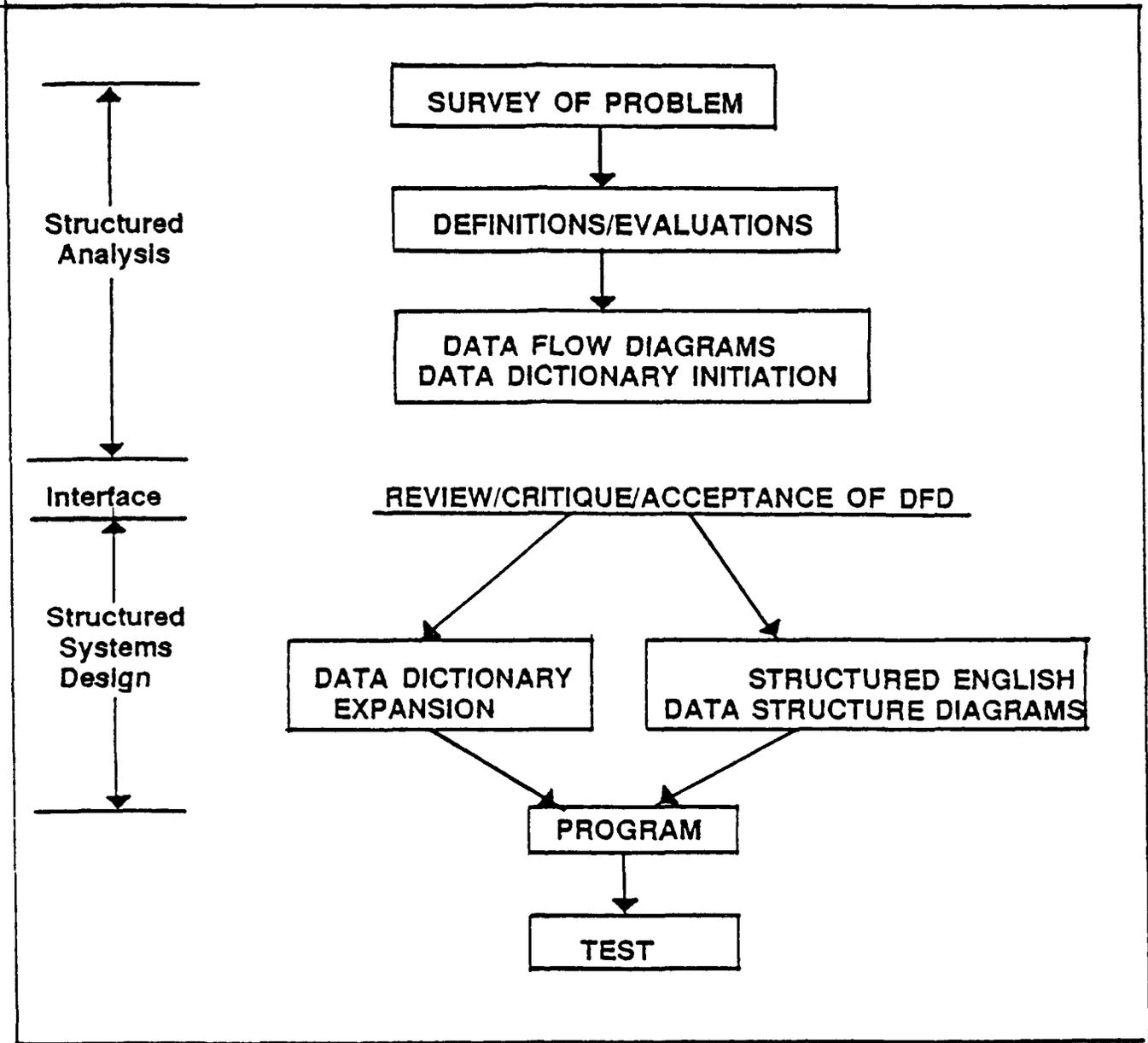


Figure 1. Structured Analysis & Structured Systems Design Organization

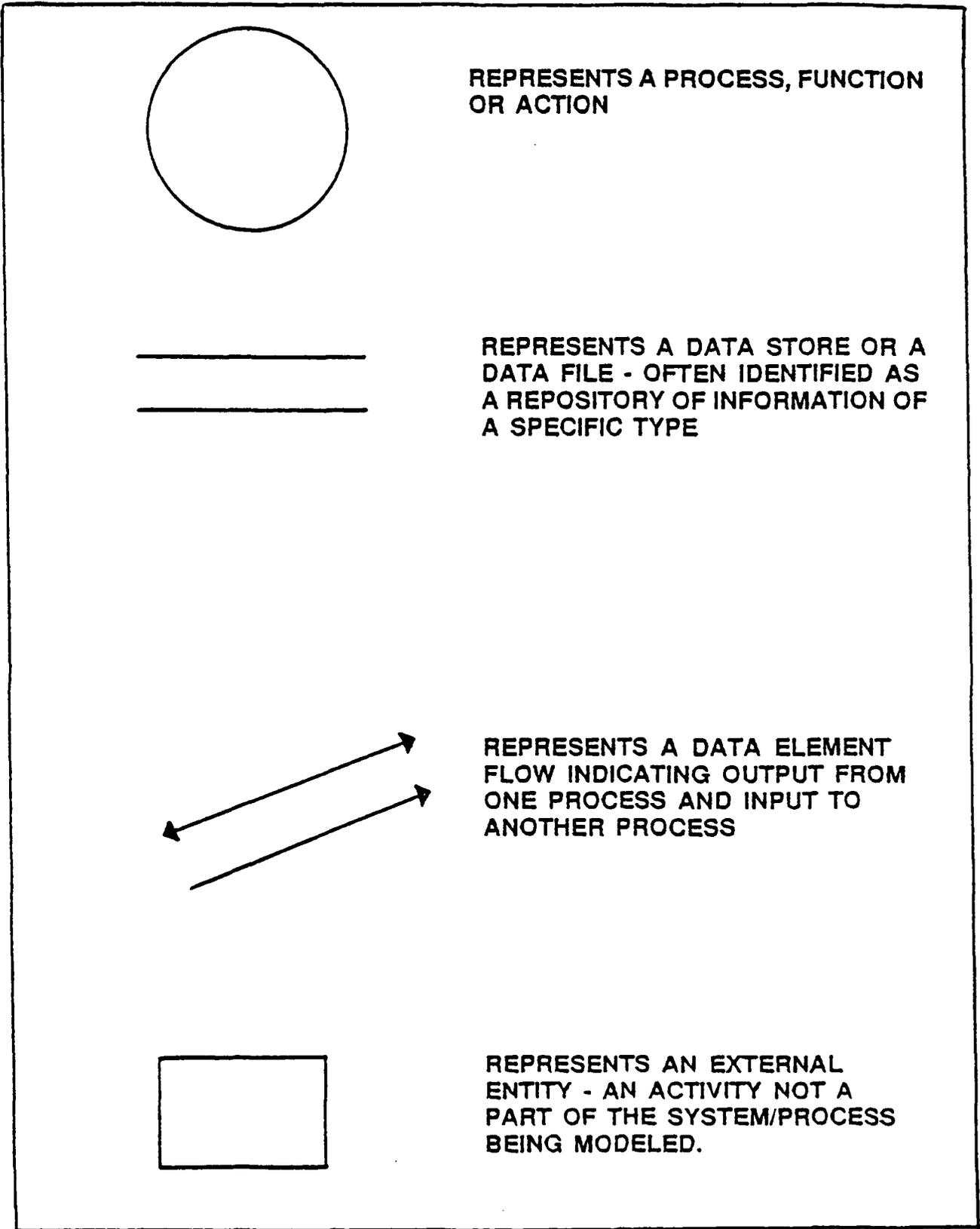


Figure 2. Standard DFD Symbol Definitions

ANNEX F

PROPOSED HELP SCREENS

ANNEX F
PROPOSED HELP SCREENS

Annex F provides examples of information that could be placed on "Help" screens. There is the potential that such screens might be either pull down or exploding screens, and access to such screens might be context sensitive. That is, when the cursor is placed upon a field, a display could be activated to indicate "HELP AVAILABLE". The user would then press a function key to bring up the help.

It must be understood that such help is not part of the deliverable product at this time and is being presented only as a potential for an improved product.

The following characteristics are directly related to Process 101.2.1.1A2 and are identified accordingly. They are not meant to be all inclusive but to be used as a guide for the user, indicating the type of thinking that should be used in developing the initial characteristics of the Strategic Data Base. When identifying such characteristics, describe them when necessary, in narrative form.

Where an asterisk (*) is designated, it refers to "Obtain from Use Studies, O&O Plan, ROC, M.A.A., Mission Area Deficiency Statements, Market Surveys, etc.".

PROCESS 101.2.1.1A2-1 - DESIGN INFLUENCE

A. Insert System Name: (40 character - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. MANPRINT - New technologies may be highly influenced by MANPRINT requirements, whereas in a NDI Acquisition, little or no MANPRINT involvement is possible.* AR 602-2.
2. Energy Efficiency * - Specify what parameters if any have been specified for fuels, energy consumption reduction goals, energy conversion/storage criteria, etc. An electronic system, e.g., may be required to operate on solar power at 1/4th the operating power of the replaced system and at the same time, require the storage of excess generated power for nighttime operation.

3. Hazardous Materiels Usage - Specify what, if any, hazardous materiels will be required in the manufacture, testing, operation, maintenance or disposal of the system/item. How can the design be influenced to reduce or eliminate the hazards.
4. Life Cycle Costs - Identify target LCC. Provide cost breakdown. Identify inclusion of design to cost criterion, if specified.* (and Cost and Operational Effectiveness Analysis (COEA))
5. Human Factors Engineering - Identify areas within the design operation or performance envelope of the system that may involve human performance/tolerance, i.e., excessive noise, smell, vibration, closeness of quarters, sustained physical positioning or performance.* Specify design parameters.
6. Safety - Identify necessity for design to incorporate safety and health hazard parameters identified in man-machine-environment interface considerations.* Includes protection from fires, contamination, noise, recoil, concussion, whiplash, materiel failures, etc.
7. BITE - Specify desirable built-in diagnostic, prognostic and self-help characteristics considered appropriate to assist in the reduction of operating and supporting/sustaining costs.*
8. Source Selection or Weighing - Enter information considered critical to these processes that pertain to design influence, such as, emphasis on commonality of components or use of existing componentry to reduce or defer inventory and data cost increases. If data is not available from (*), the Materiel Developer must provide it.
9. Testing Feedback or Corrections - Is data feedback necessary as design/testing faults occur to minimize production line or troop use impacts included in hardware/data requirements contracts? Relates to Contract Number in Header Record 101.2.1.1A1-1. It is possible that testing feedback recorrections may impact on virtually any area of design and ILS/LSA.

10. Contractor Incentives - Have incentives been included in the Acquisition Strategy hardware contract to effect lower design costs, support costs and RAM performance? Have penalties been specified for non-performance? Obtain from Contract as necessary. Establish incentives and or penalties where allowable by acquisition strategy.
11. RAM-Driven Support Costs - The objective is to reduce support costs. Look at similar systems, see if there are areas where new system design can be influenced, (i.e. through the use of modularized componentry, reduction of skill levels in operation and/or maintenance tasks). Consider requirements for new technology materiel to make items throw-away after long use rather than repaired. Specify what is wanted, and if possible, how to achieve it (*) or comparable item/equipment study.
12. Preplanned Product Improvement - If this system "Type Acquisition" is P3I, then indicate any or all types of items/equipment that can be identified as being capable of possible use with modifications to satisfy this system acquisition requirement. Specify types of modifications required and estimated costs for parts/materiel and installation.*
13. Transportability -Specify any known transportation/transportability requirements. Are there any known constraints on weight, width or height dimensions, special handling or shipping mode? Also, specify any customs or Panama Canal requirements, or special precautions, as well as any containerization requirements, if known. Identify airdrop or helicopter requirements.*
14. Facility Limitations - Identify any existing facilities limitations as they presently exist for like items, e.g., ranges, harbors, runways, hangar space, storage, training and maintenance facilities, clean room and special security facilities. If design can't be impacted by such considerations, then as a minimum, further shortfalls must be identified for inclusion in the Military Construction-Army Budget.*

15. Nuclear Hardening Requirements - Specify needs, if any, for item/equipment to be designed with chemical, biological, and nuclear operations survivability. Identify whether washdown/decontamination and use of MOPP suits are required. Specify if electro-magnetic impulse and/or high altitude electro-magnetic pulse hardening is essential to the design.* Ref. ARs 70-60, 40-10, 40-5 and MIL-STD-461 and 462.
16. Packaging/Handling Constraints - Indicate if the item is so large that it can be handled only by special cranes. Does the item contain hazardous materials. Is it subject to theft? Can the item be damaged by extreme temperatures or by other environmental factors. Apply the same considerations to spare parts packaging, End Item System preparation for shipment, and containerization.
17. Design for Discard/Testability - In the interest of reducing operational and sustainability costs, can the item be made simply from inexpensive materials for throwaway after use? If not, is the item complex enough to require the design to incorporate built-in test equipment, or go/no-go indicators.*
18. System Readiness Objective - Standard Army policy requires design to achieve 95% or greater Operational Readiness. When high cost/high technology prohibits obtaining this degree of Availability, waivers must be requested of the Dept. of the Army's Deputy Chief of Staff for Operations, identifying all suitable logic for requesting waivers. Reference AR 700-138.
19. Serial Number Tracking - Does the cost, criticality or end item status warrant design and/or attachment of data plates for S/N tracking? Should a waiver for such tracking be requested due to high administrative reporting costs? Specify permanent method of identifying parts and components part numbers that are required to be replaced due to essentiality, criticality, safety, anticipated fatigue life, etc. Obtain from project engineer and experience. Ref. DODI 4140.54.

20. Use of Metric Measurement - Determine if the use of metric measurement is desirable. Will it enhance the interoperability, interchangeability, and use by Allies? Determine if there are operative standardization agreements applicable to this item. AR 700-1.*
21. Embedded Training - Specify if the system is complex, multi-system integrated, or so susceptible to change that it is economical/desirable to consider the use of embedded training in the item/equipment design.*

PROCESS 101.2.1.1A2-2 - MAINTENANCE PLANNING

A. Insert System Name: (40 Character - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Maintenance Concept - The establishment of the maintenance concept is a very difficult and always vital step in determining logistics support needs. Due to the highly complex nature of some newly developed items it may be necessary to establish an interim and then a final maintenance concept. When technological break-through are expected or encountered a concept of total interim contractor support may be desirable until organic skills, facilities, etc. become available. In other cases involving less complex items the maintenance concept desired or required is straight-forward and directly capable of implementation. Establish the desired Echelons of Maintenance.* AR 750-1.
2. Maintenance Facilities - Determine if existing fixed and/or mobile facilities are adequate. Specify if a facilities study or facilities master plan development is required. Identify if it is necessary to establish, modify or augment maintenance facilities. If new or updates to existing facilities are required make the user commands aware of their facility planning and budgeting needs.* AR 750-1.
3. Maintenance Tasks - Define maintenance task assignment categorically by echelon of maintenance for subsequent development of (P)MAC, tools, skills, manuals, spares, etc. (i.e. go/no-go test and component replacement by using unit; Intermediate Level maintenance to perform

diagnostic testing and repair as necessary, overhaul or rebuild to be evacuated to echelons-above-corps (depot)). * AR 750-1.

4. Maintenance Organizations - Determine the specific maintenance organizations required (by TOE designation). Are increases in manpower or other changes to existing TDA/TOE's required? Can existing organizations accomplish increase in workload if any? Should present physical site be changed from fixed to mobile status? Specify all such changes required in as much depth as possible.* AR 750-1.
5. Expenditure Limits - Identify any such limits applicable to this item/equipment. If there are, but no repair experience and or costs have been generated, then develop as a factor of cost based on like items. AR 750-1, TB55 Series.
6. Maintenance Standards - Are relative standards available upon which maintenance productivity can be measured? If so use them. If not available and proven for this system, consider the use of a like systems standards (elements) as a point of departure for subsequently developing system unique standards. The principle purpose behind such standards is to highlight deficiencies in training, inadequacies in tools, manuals, etc. that occur over time, not just as a time measurement tool. AR 750-34.
7. Provisioning Plan - Is a provisioning plan/concept available? If it requires a lengthy (2-3 year) process, have provisions included in the contract for some form of interim contractor or commercial support until parts and data are available for organic support. When developing a provisioning plan be sure it integrates the provisioning plans of all subsystem supporting organizations. MIL-STD-1388-2A.
8. Operational Readiness/Repair Cycle Float - Assure that quantities have been calculated using realistic estimates to support Operational Readiness goals. Have funds been provided to acquire such quantities? If not waivers should be requested to achieve standard operational readiness rate goals. AR 710-1. Calculation must initially be based on RAM goals and adjusted during the development cycle to actual data.

9. Contractor Support - Determine if a cost and performance study should be conducted to determine feasibility of contractor support maintenance on a short or long term basis. For low density, Support and Commercial type items contractor support may provide an acceptable, cost effective alternative to placing an additional burden on organic resources. F.A.R. & AFARS

10. Depot Maintenance Support - It is essential early on in Maintenance Planning that overhaul or rebuild at fixed facilities be identified. If overhaul or rebuild is planned, the workload must be assessed by a Dept of Defense board to assign to organic Army or Interservice Support locations. Essential to the board's determinations is a facilities' needs plan, a list of Depot Maintenance Production Equipment required and lists of all special and common tools, test equipment and special skills requirements. In some instances battlefield/accident damage can only be repaired at such facilities or by prime contractors due to the need for use of manufacturing/production type jigs and/or fixtures. Determination/computation of depot maintenance overhaul or rebuild requirements by item inventory managers is a key driver and an early-on requirement. AR 750-1, AR 710-1.

PROCESS 101.2.1.1A2-3 - MANPOWER AND PERSONNEL

- A. Insert System Name: (40 Characters - A/N) from file built under 101.2.1.1A1.

- B. CHARACTERISTICS:
 1. Numbers, Skills and Grades - Consideration must be given not only to numbers, skills and grades but also the integration and possible cross fertilization of certain skills. (i.e. in a complex weapon system utilizing electronic, armament, communication and navigation system equipments in an integrated system there may be a need to cross fertilize knowledge/skills or possibly even create a systems integration specialist). AR 71-2, AR 611-201.

2. Retention Constraints - Will the system design, deployment or use constitute constraints on normal soldier/family relationships that may affect soldier retention. Will task assignments be so boring or so demanding that the retention rate will drop. Has proper consideration been given to promotion progression capabilities. Specify constraints. AR 570-4, AR 570-5, AR 602-2.
3. Recruitment or Literacy Requirements - Does the system operation and maintenance require special recruitment criteria? Is the system so unavoidably complex technically and theoretically that special education/literacy requirements must be established? If so, identify such special considerations. TRADOC Regs 350-7, 350-17 and 351-1.
4. Special/Hazardous Skill Requirements - While all possible effort is expended during the design phase to eliminate such requirements, it is not always possible to do so. (i.e. cargo ships utilize cranes. Nuclear reactors feed on radioactive fuel). Review the special characteristics of the system (if any) and identify to supporting human factors laboratories for study and recommendations. AR 40-10, AR 680-29.
5. Security Clearance Requirements - Will the system manufacturer operation and/or maintenance require security clearance of secret, top secret, cryptographic or higher? If so, advise FORSCOM, Training and Doctrine Command as well as DCSOPC and Army Intel Agency for timely screening of system associated Military, Civilian and Contractor personnel as necessary.* AR 380-5, AR 380-67, DODD 5220.22M.

PROCESS 101.2.1.1A2-4 - SUPPLY SUPPORT

- A. Insert System Name: (40 Characters - A/N) from file built under 101.2.1.1A1.
- B. CHARACTERISTICS:
 1. Provisioning/Spare/Secondary Items & Repair Parts - Have budgets (ASF, PEMA, OPA etc.) been computed using SESAME process? If not, assure that computational logic is sound and acceptable to SARDA

personnel (informally) so as to forestall budgetary justification delays. Be sure to identify any deviations to SESAME as well as data base (life systems/items) used in the process. AR 700-18.

2. Sets, Kits, Outfits - When there are known requirements, have requirements been forecasted for organic workloading to the Depot Systems Command (DESCOM). Have requirements been included in the OMA/ASF budgets. Identify potential show stoppers regarding parts availability in such lists/requirements. AR 710-1.
3. Cataloging and Related Coding - Establish a Cataloging plan in conjunction with the data and drawings schedule from the provisioning plan. This is needed to assure timely SMR (Source, Maintenance and Recoverability) and IMC (Item Management Coding), DLSC screening and assignment of National Stock Numbers as coding dictates. Failure to accomplish this on schedule can delay fielding of the item/equipment. AR 708-1, AMCR 708-2.
4. Storage Space - Physical dimension data for end items, spare and repair parts must be provided to the DEPOT Systems Command and to user commands for inclusion of additional requirements in MCA or OMA budgets. Assure that storage and assembly area requirements have been identified to DESCOM and user commands for new/displaced equipment fielding items and/or systems. AR 70-1, DA PAM 700-55, AMCR 7002-23.
5. Special Storage Requirements - Have designated storage locations been advised of special equipment, precautions or security needed? Explosive, toxic, chemical, radioactive, or items that can be damaged by humidity, salt air, heat or cold are all considered in need of special storage precautions.* AR 70-1, DA PAM 700-55, AMCR 702-23.
6. Serial Number Tracking - Assure that needs for serial number tracking requirements have been identified. From both item/equipment and method of tracking basis, ILS plans must include special procedures for user and intermediate level (transportation system) tracking. All necessary Regulations, Forms, equipment and computers must be in place. AR 710-1.

7. POMCUS Stocks & War Reserve - Compute requirements, formulate budgets, and assess impacts of identified shortages. A review of multiple conflict scenarios is necessary to become capable of assessing shortfall impacts.* AR 11-11, AR 710-1, DA PAM 700-55.

PROCESS 101.2.1.1A2-5 - PACKAGING, HANDLING AND STORAGE

A. Insert System Name: (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Handling Equipment - Due to the size, weight or nature of the item/equipment indicate if it is necessary to purchase or provide special handling equipment (i.e. heavy haulers, slings, modified fork lifts, storage racks etc.). Identify any handling constraints that are required to be overcome. AR 700-15.
2. Security Requirements - Pertains to physical security of the item/equipment while in storage, to include repair parts, inert materials, manuals, etc. Identify safes, vaults, double locked steel doors or other special containment devices required to assure security from theft, pilferage, contamination, etc. Ensure that special requirements are included in the ILSP for the depot support plans and budgets.* AR 380-5, AR 380-67, DOD 5220.22M.
3. Disposal/Demilitarization - Determine if the physical nature of the item/equipment requires demilitarization of the item before disposal, i.e., artillery, machine guns, tanks, ammo. Note special disposal procedures required to preclude environmental contamination such as with chemical or radioactive items. Identify if the item technology is such that the item or components thereto must be destroyed through controlled actions to preclude transfer of technology to enemy hands.* DOD 4162.21-M-1, AR 380-10.

4. Physical Dimensions - As soon as it is known, provide weight, height, cubic dimensions, pounds per square inch loading and like data for inclusion in user, TRADOC and DESCOM plans. Data is essential for planning timely storage space, hardstand, container, container space and pallet requirements.* AR 700-15.
5. Packaging and Preservation - Indicate when item/equipment requires special preservation and packaging to prevent corrosion, contamination, mildew, mold, rot or other types of damage due to the need for long term storage (i.e., War Reserves or Operational Stocks). Specify when normal military storage and handling preclude use of commercial packaging. AR 700-15.
6. Storage Space - Consider needs for special storage containers, shelters or trailers for high dollar reparable items at depot, user and intermediate maintenance activities. Maintenance costs can increase considerably due to lack of proper storage.
7. Decontamination Equipment - Determine if decontamination equipment is required at the user/IM/ depot storage site due to attack or need to provide protection to the environment. Identify special procedure or precautions in case of accident or attack. AR 40-10.
8. Special Precautions - Address special precautions in the preservation, packaging handling or storage of the item, necessary for the safety of personnel and facilities due to the nature of the item or related equipment and supplies (i.e., Nuclear, radiological, chemical or bacterial). Jet fuel may grow bacteria in storage. Batteries may explode if not properly handled during charging. Assure that needed precautions or procedures are included in technical data requirements.

PROCESS 101.2.1.1A2-6 - SUPPORT EQUIPMENT AND TMDE

- A. Insert System Name: (40 Characters - A/N) from file built under 101.2.1.1A1.
- B. CHARACTERISTICS:

1. Test, Measurement and Diagnostic Equipment - Virtually every system has a requirement for some TMDE. TMDE can range from simple go/no-go gauges to automatic and built-in test equipment. All such equipment requires calibration or verification that it is still within the specified ranges of performance to allow it to perform as intended. Develop and maintain a complete list of TMDE and corresponding calibration instructions. Assure that the designer/manufacturer of the acquisition item/equipment utilizes the TMDE Register (AR 750-43) and Preferred Items List (DA-PAM 700-20-1) to preclude the procurement of available TMDE and associated technical data, where possible.* Consider BITE in place of special TMDE for low density, high reliability systems.
2. Associated Support Items of Equipment - Describe the need for Auxiliary Power/Hydraulic Units, Electric Generators, Cranes, Light Sets, POL or ammo carriers, recovery or evacuation equipment, fork lifts, bulldozers, etc. Determine if the equipment is in existing units and available for use. Must the equipment be modified or is it useable as is? Specify new equipment required. Assure the BOIP feeder data (AR 71-2) has been completed.
3. Tools & Tool kits - Assure that special care is taken to provide for high technology items special and common tools to satisfy maintenance requirements. Under a streamlined acquisition policy it is essential that tools and tool sets be evaluated with first article delivery. If evaluation is postponed until OTE, inadequate support items may already be in place. AR 71-2. Avoid need for special tools for low density systems assume that all the tools required are included in the kits authorized for the supporting maintenance organizations.
4. Test Sets or Test Program Sets - It is sometimes necessary to provide the prime contractor with Government-Furnished Equipment (GFE) test sets to assure the proper functioning of junction boxes, wiring harnesses, switches, etc., prior to system acceptance by the Government. Such test sets may also be needed to measure allowable Electro-Magnetic interference, power drains etc. Assure that the test set item manager is aware of Test and

Evaluation Master Plan (TEMP) schedule requirements for the system being procured. A Test Program Set (TPS) may consist of an Interconnection Device (ICD) Test Program (Software), and Technical Manuals. In this latter case the TPS may be required to be purchased through the contractor or government furnished as the situation dictates.

PROCESS 101.2.1.1A2-7 - TRAINING AND TRAINING DEVICES

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Joint Service Training - Determine if training on this or similar equipment is being conducted at the facilities of another service. Assess cost effectiveness of using another service's training base for Army training. Determine necessity for the Army to be the proponent for training other service members under a joint service training agreement. TRADOC-PAM 350-3.
2. Training Plans - Analyze plans to assure they have been developed and coordinated and that they will accomplish required factory training, instructor, key personnel and system target audience training. Assure that training plans address skill levels, skill specialties and skill qualification testing. Ensure that issues of resident and extension course training lesson plans, instructions and materials have been resolved. Determine if training plans provide special consideration for reserve force personnel time constraints. AR 350-38, AR 611-201.
3. Training Devices and Equipment - Determine if systems/items/equipment are designated for the training base. Determine how they will be supported. Identify special training devices and/or simulators required as a cost effective means of conducting training. Specify how they will be supported. In both instances, affirm support cost responsibilities by command. Identify depot training/training devices required if the system has depot level reparables. Describe Soldier or Field Manuals required to provide a more comprehensive and cohesive insight to the field integration and use of the system.*

PROCESS 101.2.1.1A2-8 - TECHNICAL DATA

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Technical Publications - Considerations of publications requirements can be highly complex and are worthy of cost analysis. Factors to be considered are system density, commercial supportability, system/item essentiality and cost when determining whether to require delivery of full scale DA technical manuals or DA authenticated commercial manuals at considerably less cost.
2. Evaluate the need for technical bulletins, lubrication orders, supply bulletins, Repair Parts and Special Tools Lists (RPSTLs), Interim support/repair parts lists, MAC charts, transportability manuals and needs for Depot Maintenance Work Requirements. Consideration must also be given to use of other services documentation and if available publication and use as Joint Services Manuals, Bulletins, etc. Determine method of updating, i.e., prime contractor, Government, subcontractors. Determine if the Government will verify and validate publications. Plan for updates after TT/UT and again after the production run and first article test is completed. AR 70-37.
3. Technical Documentation - Due to high cost, weigh essentiality of level of documentation required to provide follow on logistical support (e.g. drawings and specifications). If data is not required, must Level 1 or Level 2 acceptable for NDI or Level 3 drawings be obtained for organic maintenance/manufacture of materiel. When working in new technologies determine if the manufacturers process specifications must be obtained. Is equipment so complex that special test, calibration or systems integration specifications and procedures are also necessary. Determine method of update, verification and validation. Plan for updates after the production run is completed. AR 70-37.
4. Test Results - Determine if a Test and Evaluation Master Plan (TEMP) was developed and deliverables included in the item contract DID's. The Materiel Developer is responsible for paying for materiel technical testing, test evaluation and associated TDY costs. Assure that the budget contains adequate provisions for this. AR 70-10 and DA-PAM 70-21, AR 71-3.

5. MANPRINT Data - Assure that the contract includes consideration of requirements for data to support the Manprint Data Base. ARs 602-1, 602-2.
6. Packaging Procedures - Due to nature of the item, special consideration may be required to acquire special packaging procedures and lists of materials; to assure safe handling, adequate storage, transportation protection and/or environmental protection. AR 700-15, AR 70-37.
7. LSA/ILS Documentation - Assure that budget and contract deliverables are considered for LSAR and ILS Planning documentation. Also include any possible software (ADP) deliverables (programs documentation) appropriate to the item being acquired. Ensure that engineering changes are controlled and integrated into the technical data packages. Plan for LSAR control and updates after the production run for breakout and competition purposes. AR 70-1, AR 70-37, AR 700-127, MIL-STD-1388-1A and 1388-2A.

PROCESS 101.2.1.1A2-9 - COMPUTER RESOURCES SUPPORT

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Computer Resources Management Plan - Based on the nature of the item/equipment determine the need for a CRMP. Assure that the plan includes both system and automatic test equipment operational software, documentation, equipment and training deliverables and associated schedules. Incorporate Manprint requirements.* AMCR 70-16.
2. Post Deployment Software Support - Assure PDSS government/contractor support structure is planned and executed. Strategy must allow for expansion, product improvement and the test verification process.
3. Software Storage, Security Requirements - Identify storage serviceability standard if published. Identify any special care required such as humidity control, static free and grounding requirements. Specify constraints for equipment as well as software. AMCR 702-23.

PROCESS 101.2.1.1A2-10 - TRANSPORTABILITY AND TRANSPORTATION

A. Insert System Name (40 Character - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Deployment Requirements - Specify tactical and strategic deployment needs. Identify restrictions or limitations regarding transportation mode. Determine design versus cost tradeoffs in order to attain maximum economical T&T advantages. Submit transportability request. AR 70-47.
2. Test Requirements - Define T&T test requirements for inclusion in the TEMP. Assure coordination of the TEMP with MTMC-OTEA, Ft. Eustis, VA.. All weight, cubic, dimensional and center line/balance data must be available for the T&T test/study to commence.
3. Special Instruction/Guidance - Determine need for Guidance Technical manuals, joint service manuals or special care instructions for use during repair and movement. Describe any special loading or unloading configuration layouts (i.e. first Priority items are last items loaded to be first items out/off).

PROCESS 101.2.1.1A2-11 - FACILITIES

A. Insert System Name (40 Character - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

NOTE: Facilities may have been addressed in other segments to obtain functional input regarding their special area operations. In this segment the facilities engineering planning needs are the primary focus.

1. Training Facilities Requirements - Depending on the sophistication of the item/equipment being acquired, training facilities may range from a room and equipment for video tape viewing to complex facilities for missile launching, flight training, ranges, tracks and ports for ships training. If new facilities are indicated, the

Military Construction - Army process requires a minimum of 5 years to fund them. It is absolutely essential that facilities engineers are kept abreast of system/item/equipment design development. Feedback to the PM on status of facilities requirements is also essential. If organic training will not be ready prior to fielding the PM must have been in a budget and contracting position in sufficient time to have contractor training available. The facilities engineer and the training staff specifying training aids/ devices, ASIOE and curriculum must remain coordinated.

A few of the specific areas requiring special review for applicability for change are; Electrical power, inlet and exhaust air/gasses, concrete imbedded platforms & stands, computer installations, emergency power supply, Electro Magnetic Interference, equipment cooling/coolant, heating, cooling and humidity control. ARs 70-1, 700-127, 37-100-Fy, MIL-STD-1472.

2. Depot Maintenance Facilities Requirements - Consider needs for dynamometer, load stand and special machine or tooling installation. Determine needs for whirl towers, engine test cells, bore scoping, stress testing and analysis facilities. Also specify special facility needs for rail, ship, air or truck on post terminals or facilities needed to interface with commercial carriers. Consider manloading and equipment workload requirements and expansion capabilities. Identify facilities required to comply with EPA rules and regulations.* ARs 70-1, 700-127.
3. Mobile Facilities - Specify any requirements to purchase or modify mobile maintenance or storage to include ammo/special storage facilities. Assure that special security precautions or provisions are specified. Needs regarding commercial/organic utilities considerations must also be identified.* AR 700-127.
4. Testing and Operational Facilities - Identify requirements for facilities to conduct design, materials and/or operational testing. When possible use common facilities to avoid duplication of expense. Use by Army of existing NASA, Air Force or Navy facilities to conduct materials testing by Cross Service agreement or contract is good business. * AR 70-10, DODD 5000-3.

5. Facility Physical Security - Define any facility needs to assure item/equipment security to include health hazard or safety precautions necessary to facilitate operation of a healthy, safe and secure facility. * AR 40-5, AR 40-10, AR 385-9, AR 385-10, AR 40-583, AR 385-16.
6. Facility Utilities - Identify needs for power, water, sewage and waste disposal. Identify source, whether on routine or emergency basis. Analyze needs and establish growth projections.
7. Special Facility Requirements - Determine if the storage, maintenance or operation of the item/equipment requires special facilities. Some examples are isolated and/or sparsely populated areas for CBR weapons, missile storage/deployment in mountainous areas, ocean access areas for ship operations or deployment outloading.*
8. Troop Facilities - Assure that adequate detail is given to housing and dining design requirements to accommodate both male/female, to maintain morale and to meet health and environmental needs. Determine leadtimes and costs to assure availability of facilities either through MCA funding, mobile or other temporary facilities (i.e. an aviation unit is scheduled for assignment to a previously designated artillery post. Airfields & quarters are required).*
9. Training Ranges - Determine range requirements for artillery, missiles, strategic and tactical, air to ground, air to air and ground to air, tanks, small arms, etc.. Include requirements for target systems, scoring equipment, fumes dispersal equipment, etc.. Consider use of joint training facilities when economical. Assess power and other utility requirements.*

PROCESS 101.2.1.1A2-12 - STANDARDIZATION AND INTEROPERABILITY

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Standardization Plan - Determine if there are specific design parameters to be followed (i.e. Armored Family of Vehicles). Could the chassis provide a common frame and should common componentry be required to the maximum

degree possible. Any effort in this area will reduce support costs for publications, technical data, drawings, etc.. Design and Development leadtimes for other items within the family can also be reduced. * ARs 700-47,700-60.

2. Interoperable Systems - Standardization of systems/subsystems to assure interface and interoperability with other major systems is critical. Require that contractors/developers of items (i.e., radios) assure interoperability between aviation, Infantry, Command & Control. Assure that other service, NATO and other allies interface considerations are met. * ARs 12-16, 34-1.

PROCESS 101.2.1.1A2-13 - RELIABILITY, AVAILABILITY AND MAINTAINABILITY

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Reliability - Provide qualitative and quantitative reliability requirements. If the item/equipment is a totally new/emerging technology then specify the minimal acceptable/achievable reliability goals, with requirement for the contractor or developer to provide a reliability growth plan to achieve final reliability objectives. * AR 702-3.
2. Maintainability - Specify quantitative and qualitative maintainability goals for each identifiable maintenance task of the system. The maintainers must be capable of performing the unit level inspection, minor repair and component replacement tasks (repeat for other established echelons of maintenance tasks as well as unit if applicable). Specify the minimum numbers of personnel, skill levels and target time allotments for specified maintenance task performance (i.e., 1 unit level junior mechanic must be capable of changing spark plugs in 30 minutes; 2 intermediate level journeyman mechanics must be able to exchange (or changeout) transmission in 2 hours).

3. System Readiness Objectives - The Army standard SRO is 95%. If for any reason, (such as excessive cost to achieve objective) the objective cannot be attained then a request for waiver must be obtained from DA. Life Cycle Cost Analysis and/or trade-off studies will be required to support waiver requests. * AR 220-1, AR 95-33, AR 750-40 and DA PAM 738-750.
4. Testing - Develop a test plan to prove (by contractor or developer) that RAM requirements were met. For repairable and or repairable type items it is not only necessary to prove through testing that the item (i.e., engine) will not only run 1,000 hours before requiring overhaul, but that in fact, it is repairable (not scrap) at the 1,000 hour interval. Test results in written form confirmed by government witnesses to the tests are a firm requirement. Maintainability must also be proven, to include representation from the user target audience that the item and or equipment is maintainable using TMDE specified in time frames designated by quantity and skill levels specified. Documentation of testing is required. AR 70-10, AR 71-3, AR 702-3.

PROCESS 101.2.1.1A2-14 - SUPPORT MANAGEMENT AND ANALYSIS

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Planning - Primary to the entire process is the planning, programming and budgeting for the resources needed to manage the myriad of activities associated with Acquisition Management (AR 70-1). Not only are plans necessary to provide LSA, ILS, T&E, Support Transition, Configuration management, sample data collection and post fielding assessments, but also for funding contractor or organic resources to carry out the plans and provide required documentation is necessary.

While some level of resource constraints will always be in effect the Materiel Developer (PM), must know his total resource requirements to accomplish a trade-off analysis and develop strategies (i.e. the acquisition of extensive LSA data with End Item dollars is wasted if manpower dollars (OMA/End Item) will not be available to organically or contractually utilize/analyze the data). AR 70-1, AR 700-127, DA PAM 700-55, MIL-STD-1388-1A, MIL-STD-1388-2A.

2. Competition - By statute, most PMs must now consider competition in procurement for future support (follow-on) beginning in the design and development stages of the acquisition cycle. Determine the need for acquiring the proper level of LSAR, technical data and drawings to support the law. With due consideration given to this statute, it is considered highly desirable to obtain warranties to the maximum extent possible, not only for original items delivered but those subsequently purchased through the competition in procurement procedures. Budget for Warranty Manuals and revisions.
3. Testing and Evaluation - Participate in the Test Integration Working Group (TIWG) and furnish input to the Test and Evaluation Master Plan (TEMP). While testing and evaluations are required by numerous regulations and results normally provide status on a go/no-go or correction required basis, there may be a tendency to accept tunnel vision reports/recommendations.

Assure that resources are allocated for review (validation) of test data bases, comparisons made and recommendations rendered for relative merit to the item/equipment and its intended operational modes or environment. AR 70-10 and AR 71-3. Ensure resource identification for full ILS participation in TIWGs and at all tests and evaluations, as there is no part of the development cycle that does not impact logistics to some degree. Study all Test Incident Reports (TIRs) and participate in the scoring conferences.

4. Documentation - Assure dollars and Data Item Descriptions are in place for the documenting of all Concept Formulation development and or prototypes/RAM/TEMP and management efforts. The documentation is needed to substantiate continuance of development to fielding phases of the item acquisition. Provide resources to accomplish Post Fielding Assessment. Documentation is also essential for proving reliability to allies for Foreign Military Sales. In some projects it may even be required for the PM to acquire computers and laser printers to produce adequate, timely copies of voluminous reports/documentation. Identify documentation required by supported and supporting organizations to the Mat. Dev. or TRADOC as part of the Materiel Acquisition, Support Management and Analysis process. Timely budgeting is essential.

PROCESS 101.2.1.1A2-15 - COST ANALYSIS AND FUNDING

A. Insert System Name (40 Characters - A/N) from file built under 101.2.1.1A1.

B. CHARACTERISTICS:

1. Cost and Operational Effectiveness Analysis - While the COEA is the technical responsibility of the Combat Developer, much of the actual cost data may be required to be furnished by the Materiel Developer (PM). Resource funding to develop the COEA is required as well as for the TOD, TOA and BTA. Enough emphasis cannot be placed on the programing and budgeting phases of any project. Success or failure of completion of programs on time is frequently directly related to lack of funds for program execution due to poor budget input. AR 71-9, DA PAM 11-4.
2. Baseline Cost Estimating - Assure that all prior considerations herein and their related projected costs are included. PMs assure that BCEs are validated by the servicing Resource Management Office. This is a key document worthy of personal involvement by the Materiel Developer (PM). DA (SARDA) recognizes the BCE as a primary budget input document.
3. Materiel Fielding - Total package fielding is the Army policy. Costs are allocated by category to user commands and Materiel Developers. Assure understanding and agreement by all parties to this task through Materiel Fielding Agreements to allow proper/timely budgeting and execution to occur. AR 700-142.