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A Systems Analysis, Design and Implementation of the Centralized Inventory Management System for Low Volume Products (CIMS/LV)

Sandra A. Harris

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A SYSTEMS ANALYSIS, DESIGN AND IMPLEMENTATION OF THE CENTRALIZED INVENTORY MANAGEMENT SYSTEM FOR LOW VOLUME PRODUCTS (CIMS/LV)

Sandra A. Harris

A Digest Presented to the Faculty of the Graduate School of the Lindenwood Colleges in Partial Fulfillment of the Requirements for the Degree of Master (Executive M.B.A.)

1984

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DIGEST

The development of an information system, no matter what its size and complexity, requires many coordinated activities. The systems development methodology is a standard way to organize and coordinate these activities. The analyst who uses this methodology can apply it in any kind of organization regardless of his or her expertise relative to the organization's operations. For example, by following the systems development methodology the systems analyst can perform systems work on an inventory tracking system, a jewelry importing firm, a police department, and so forth without being concerned about the specific operations of each organization. Obviously, the more one knows about a particular organization, the better one can perform systems work. On the other hand, a systems analyst can enter a totally unfamiliar organization and perform systems work, and develop a viable information system if the methodology is followed.

The systems development methodology is being presented in five phases as it relates to the information system building blocks.

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A SYSTEMS ANALYSIS, DESIGN AND IMPLEMENTATION OF THE CENTRALIZED INVENTORY MANAGEMENT SYSTEM FOR LOW VOLUME PRODUCTS (CIMS/LV)

Sandra A. Harris

A Culminating Project Presented to the Faculty of the Graduate School of the Lindenwood Colleges in Partial Fulfillment of the Requirements for the Degree of Master (Executive M.B.A.)

1984

COMMITTEE IN CHARGE OF CANDIDACY

E. J. Kirk, Ph.D.
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Mr. Roderick Taylor

Mr. Claude E. Harris

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ACRONYMS USED IN THE CENTRALIZED INVENTORY MANAGEMENT SYSTEM FOR LOW VOLUME PRODUCTS (CIMS/LV)

AAD - Area Administrator
AT&T - American Telephone And Telegraph Company
AT&T-IS - AT&T-Information Systems
ADJT - Use to Adjust Report
AWAT - Assemble Wire and Test
BISP - Bell Information System Practices
CAD - Company Administrator
CEUM - Company Equipment to USOC Mapping Table
CI Clerk - CIMS/LV Input Clerk
CICS - 'C' Inventory Control System
CIMS/LV - Centralized Inventory Management System for Low Volume Products
COMM - Commercial
CUEQ - Company USOC to Equipment Mapping Table
DARR - Disconnect Awaiting Removal Report
EO - Equipment Order
IFM - Installation Force Management
INST - Installation
LOCL - Local
MAINT - Maintenance
MICS - Maintenance Inventory Control System
MIIS - Management Inventory Information System
MOD EO - Modify Equipment Order
MOD SO - Modify Service Order
MTTR - Mean Time To Repair
OFFL - Official
OTC - Operating Telephone Company
PORL - Purge Order Listing
REPC - Repaired 'C'
RET - Return
RINT - Return-In-Transit
RMT - Returned Material Tag
SDC - Supply Distribution Center
SLIMS - Supply Line Inventory Management System
SO - Service Order
TCS - Telephone Company Storeroom
TELCO - Telephone Company
TIC - TWIS Input Center
TRAN - Use to Transfer Report
USOC - Universal Service Order Code
WECO - Western Electric Company

PHASE I: SYSTEMS ANALYSIS

INTRODUCTION

The development of an information system, no matter what its size and complexity, requires many coordinated activities. The systems development methodology is a standard way to organize and coordinate a company's activities. The analyst who uses this methodology can apply it in any kind of organization regardless of his/her expertise relative to the organization's operations.

The systems development methodology and its relationship to the information systems building blocks contains five phases:

1. Proposal to Conduct Systems Analysis Report and Systems Analysis Completion Report.
2. General Systems Design Proposal Report.
3. Final General Systems Design Report-Systems Evaluation and Justification.
4. Final Detail Systems Design Report.
5. Final Implementation Report.

PREPARING TO CONDUCT SYSTEMS ANALYSIS

Listed are some of the reasons why systems analysis is initiated, as well as some of the difficulties of defining the scope of the analysis.

Guidelines for preparing a Proposal to Conduct Systems Analysis Report are also given.

Reasons for Initiating Systems Analysis:

1. The analyst acquires an understanding of why the analysis is being taken.
2. Problem solving.
3. New requirements.
4. Implement new idea/technology.
5. Broad systems improvement.

In many instances the reasons for initiating systems analysis are vague and poorly defined by the initiator. However, the analyst must be careful to identify any specific objectives stated. Frequently, there are specific objectives given to the analyst concerning elements of cost, quality, and timing related to conducting the systems analysis, which will affect any recommendations that result. These stated objectives are a major factor in determining the scope of the investigation.

Defining the Scope of Systems Analysis:

The activities and events comprising systems analysis are for the most part directed toward answering the question.

An overriding criterion, which to a great extent dictates the scope of systems analysis,

is the systems structure adopted by the organization. There are three broad alternative approaches for developing information systems. They are (1) the centralized systems structure, (2) the distributed systems structure, and (3) a combination of the two. The systems analyst may make suggestions as to how the total system might be improved, but he or she still must work within the context dictated by management. The scope of the systems analyst can vary widely in terms of duration, complexity, and expense. Consequently, the scope must be defined somewhat arbitrarily at times to meet constraints such as time and cost.

Often, in practice, an analyst who fails to define the scope of the systems analysis properly, either fails to achieve objectives, or achieves them at a great loss of both time and money. However, it must be understood that the presence of limiting objectives (or constraints) on the scope of the analysis, limit the potential solutions and/or the recommendations that result from the analysis. As a rule, the initial definition of purpose and scope, as well as any given objectives and constraints, are subject to redefinition at a later date, based

on findings in the analysis.

PREPARATION OF A PROPOSAL TO CONDUCT SYSTEMS ANALYSIS REPORT

Once the systems analyst completes the initial interviews and determines that systems analysis should be conducted, an understanding of what must be accomplished and the general approach toward this goal must be communicated formally to both the requestor and the systems analyst's own management. This communication is termed the Proposal to Conduct Systems Analysis Report. It provides a checkpoint at which the requestor can evaluate whether or not the analyst clearly understands what is desired, and it gives the analyst's management an opportunity to evaluate the approach and amount of resources to be utilized during the analysis.

The report should facilitate an initial in-depth understanding, as well as provide reference points that can be accessed when actual performance of the analysis can be periodically reported. It should include the following:

1. A clear, concise definition of the reasons for conducting the analysis.

2. A specific statement concerning the

performance requirements of the proposed system.

3. A definition of the scope of the analysis.

4. An identification of the facts that will likely need to be collected during the analysis.

5. An identification of the potential sources where the facts can be obtained.

A schedule which lists the major events or milestones of the analysis.

While the analyst should exercise a great deal of care in preparing this report, it should be remembered that the report itself is intended only to be a guideline. As the investigation progresses, the analyst might modify, add, or delete from the original report. Thus, the resources spent preparing the report must be balanced against the expediency in providing it.

SOURCES OF STUDY FACTS FOR SYSTEMS ANALYSIS

There are various sources of study facts in and around the organization that are available to the analyst during systems analysis. Listed are three categories of study facts:

1. Studying the Existing System - An examination of the advantages and disadvantages will shed some light on when the old system should be studied and to what extent it should be studied.

The primary advantages of analyzing the old system are:

a. Effectiveness of present system.
b. Design ideas.
c. Resource recognition.
d. Conversion knowledge.
e. Common starting point.

The primary disadvantages of analyzing the old system are:

a. Expensive.
b. Unnecessary barriers.

2. Studying the Internal Source - The single most important source of study facts available to the analyst is people. This includes not only the formal management, but the clerical and production workers as well. Information requirements can best be stated by the users of the information. However, the analyst can help the users define their requirements by explaining to them what can be provided.

A second source of study facts for the analyst comes from the existing paperwork within the organization. The paperwork in most organizations can be classified as that which describes how the organization is structured, what the organization is or has been doing, and what the organization plans to do.

A word of caution is in order when organi-

zational documents are utilized as sources of study facts in systems analysis. Organizational documents do not necessarily reflect reality. At best, these documents serve to give the analyst an understanding of what management considered its structure and direction to be at one point in time.

A third source of study facts important to the analyst can be termed relationships. Defining the relationships between people, departments, or functions can provide the analyst with information and insights not formerly known or documented anywhere within the organization.

The analyst provides an opportunity to present to management, at a time when their attention is strongly focused on a subject, not only the analyst's discoveries, but ideas, suggestions, and recommendations from various levels of operating personnel.

3. Studying the External Sources - The systems analyst's work can take him or her outside the boundaries of the segment of the organization for which the analysis is being conducted. Exploring other information subsystems within the organization can be a useful source of data collection, data processing, or

information reporting ideas and techniques. Moreover, reviewing other systems provides an opportunity to identify potential interface points when the analyst is involved in a limited or subsystem analysis.

Just as meaningful, though often overlooked is a review of similar information systems in other organizations. Not only can this be a source of new ideas but it can provide the analyst with an opportunity to actually see a system, subsystems, concepts, techniques, and mechanisms in operation.

Textbooks and professional journals provide still another source of study facts for the analyst. Studying this material may entail simply reviewing known theory and practice, or searching for new ideas, theories, and proposals. Similarly, the analyst can profit from attendance at professional seminars, workshops, and conferences held throughout the country.

Sales brochures from equipment and computer software vendors are an excellent source of concepts and ideas.

The sources of study facts available to an analyst during systems analysis are varied and plentiful. What sources are exploited will

differ from analysis to analysis as time and cost constraints are considered.

FRAMEWORKS FOR FACT GATHERING

Many of the frameworks for fact gathering are dictated by the reason and scope of the study. A discussion of the more widely used frameworks for study fact gathering will demonstrate their usefulness and will also provide a basis for other techniques to be conceived by the reader.

Under the Decision Level Analysis approach, the analyst interviews the key managers to categorize the major resources of the organization. Resources include both tangible and intangible assets, such as inventories, plant and equipment, employee skills, and so forth. The major argument for this approach is that managers at all levels need an information system that provides information about resource use.[1]

---

[1] Dr. Germain Boer, "A Decision Oriented Information System," Journal of Systems Management, October, 1972, pp. 36-39. With permission.

The Information Flow Analysis approach is a popular method utilized by systems analysts when attempting to identify what information is required, by whom, and from where it is obtained.

The Input/Output Analysis approach is when the analyst investigates the old system to gain an understanding of what is presently being done, particularly the mechanized or computerized portions of the system, facts can be collected in terms of inputs and outputs.

There are three basic hazards which the analyst constantly must be on guard against while gathering study facts:

1. Using incorrect or misdirected facts.
2. Making conscious or unconscious assumptions.
3. Checking and verifying every potential source.

The following is an illustration of how to prepare a Systems Analysis Report:

CENTRALIZED INVENTORY MANAGEMENT SYSTEM/LOW VOLUME (CIMS/LV)

Phase I: Systems Analysis

Overview of the CIMS/LV System. CIMS/LV is a computerized system designed to provide management with a means to control station investment

in data and teletypewriter equipment, maintain high levels of service and implement a reduction in field stock.

CIMS/LV is a culmination of other systems undertaken over the last several years. Listed are those systems:

1. Supply Line Inventory Management System (SLIMS).

2. Maintenance Inventory Control System (MICS).

3. 'C' Inventory Control System (CICS) with the capability to manage field stock inventories.

An important aspect of the CIMS/LV System is the use of its tracking procedure which includes the movement of equipment to and from a customer location. Within CIMS/LV, the movement of equipment due to customer requests is handled by means of a service order. (See Exhibit A.)

Basically, a telephone customer may request one of three types of service:

1. The installation of a particular service, involving the connection of equipment.

2. The removal of a service, requiring the disconnection of equipment.

3. The modification of an existing service, including the connection and/or disconnection of equipment.

EXHIBIT A
Page 1

SERVICE ORDER

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SW-9281
Rev. (1-83)
USOP SEC II

1	SEC	S08
2	ZOG	104
3		
4	LN	M*C*DONNELL; DOUGLAS
5		CORPORATION--
6		(1)HEADQUARTERS
7	SA	325 MCDONNELL BLVD
8		
9	---FILL	
10		
11	ICCON	R ANTHONY 233-5335
12	IPON	DC83-567
13	COS	232-0232
14		
15	---RMKS	
16		
17	RMK	WRO 445,SEE R ANTHONY,CIB
18		ELEANOR 957-1301,DFB,
19		COMPT TO SOEC SS 621-2207
20	RMKR	RMATS,CROSS REF TO 233-0256
21	SCI	10-12-11,10-12-11,10-13-12
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23	---S&E	
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DML	DPN
DPR	CT
REA -I	-S
NI	RI
RFU	RFA
RFC	RFM
RCO	
HRS	
TSR	LIC
LIF	LS
ERM	
LSO	
TT	TB

MC

MIFM	INITIALS
CREW	_____ _____
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PRESURVEY SENT	_____ DATE _____

RETENTION PERIOD - 3 MONS.

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EXHIBIT A
Page 2

SERVICE ORDER

0V41 00162

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ORD	C260876	CUS	CD		DD	

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I      RTCC4  /DES OPTNS A2,B4,C5,
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I      RJ36X
I      RJ45S
E      CPERN  /EN AA998762186PCF
              /RF 0.2B
              /CX 233-1988

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CN	B			
THY				
OCB	N-			
CN	N			
THN				
AE				
SWO				
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IIML			RAML	
DML			DPN	
DPR			CT	
REA		-I		-S
NI			RI	
RFU			RFA	
RFC			RFM	
RCO				
HRS				
TSR			LIC	
LIF			LS	
ERM				
LSO				
TT			TB	

MIFM		INITIALS
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PRESURVEY SENT	_____ DATE	_____

RETENTION PERIOD - 3 MONS.

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The service order feature of CIMS/LV is designed to track the entire service process from the point at which the order is placed to the time the request is completed. This cycle includes entering the order into the data base, monitoring it for timely completion, ordering any required equipment not available locally, modifying the order to reflect changes or updates and reporting equipment installed (connected) and/or removed (disconnected). (See Exhibit B.)

Definition of CIMS/LV users problems/needs. The System Analysis will be conducted to determine if the objectives set forth by the CIMS/LV System are being met.

Concerned managers and CIMS/LV users feel that the following objectives have not been met due to the design of the CIMS/LV System:

1. Reduce field stock investment.

2. Establish maximum maintenance spare stock levels for each work location.

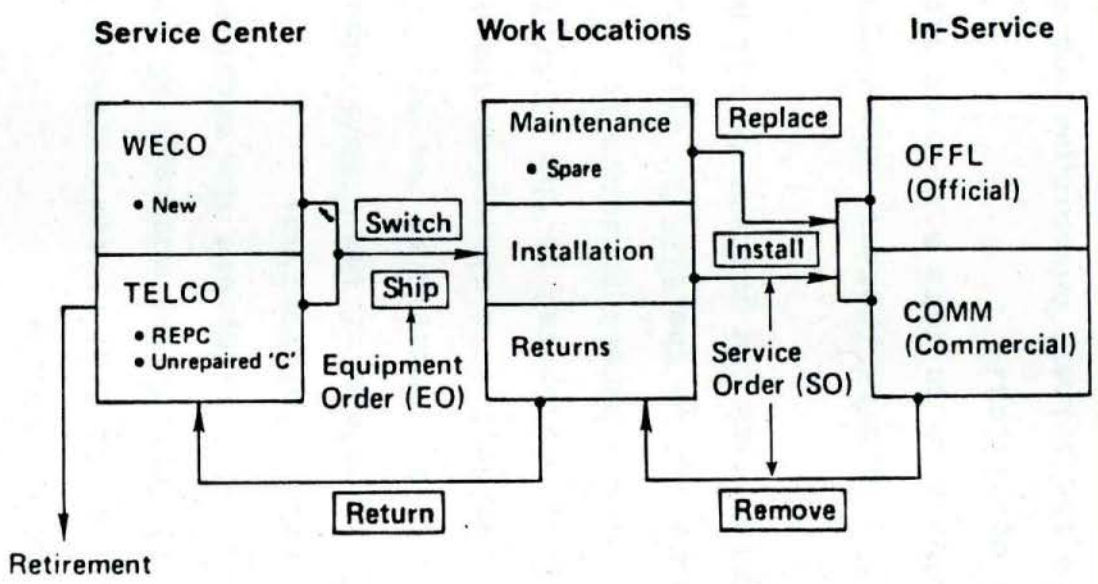
3. Return all surplus stock to the supply pipe line for immediate use.

4. Purify CIMS/LV field stock and in-service inventories by work location.

5. Educate field personnel in CIMS/LV procedures.

EXHIBIT B

Inventory Loop And CIMS/LV Commands



▭ – CIMS/LV COMMAND

6. Assure all CIMS/LV procedures and maximum stock levels are posted.

Since, the CIMS/LV System is failing to meet its objectives, a System Analysis will be conducted to either enhance the system or develop an information system which will satisfy the needs of management and the users.

Changes in the CIMS/LV System Performance Requirements. 1) Improve the accuracy of the CIMS/LV data base and 2) Improve the accuracy of the CIMS/LV reporting information.

Critical Assumptions of the CIMS/LV Operation. 1) Develop Methods and Procedures for the CIMS/LV Operation, 2) Provide formal classroom training for all work groups connected to the CIMS/LV Operation, 3) Provide annual seminars for all work groups connected to the CIMS/LV Operation, and 4) Provide updated training packets to all work groups.

Scope of the CIMS/LV System. The purpose of the System Analysis is to take a look at the present CIMS/LV System Operation.

Listed are the primary advantages and disadvantages of analyzing the existing CIMS/LV System:

ADVANTAGES:

1. Effectiveness of the present CIMS/LV System. Studying the present system provides an opportunity to determine whether that system is satisfactory, is in need of minor repair, requires a major overhaul, or should be replaced.
2. Design ideas. Analyzing the present system can provide the analyst with an immediate source of design ideas. These ideas include what is presently being done and how, as well as what additional needs or capabilities have been requested over the years.
3. Resource recognition. Examining the present CIMS/LV system allows the analyst to identify the resources available for the new system or subsystem. These resources might include the management talent, the clerical talent, and the equipment currently owned and operational.
4. Conversion knowledge. When the new system is implemented, the analyst is responsible for having previously identified what tasks and activities will be necessary to phase out the old system and began operating the new system. To identify these conversion requirements, the analyst must know not only what activities will be performed, but also what

activities were performed.

5. Common starting point. When communicating with management, the systems analyst is an agent of change. As such, often the analyst will be confronted with resistance to new techniques, ideas and methods, lack of understanding of new concepts, procrastination in obtaining decisions, lack of commitment to making the new system work, and other similar manifestations of people being asked to change familiar activities.

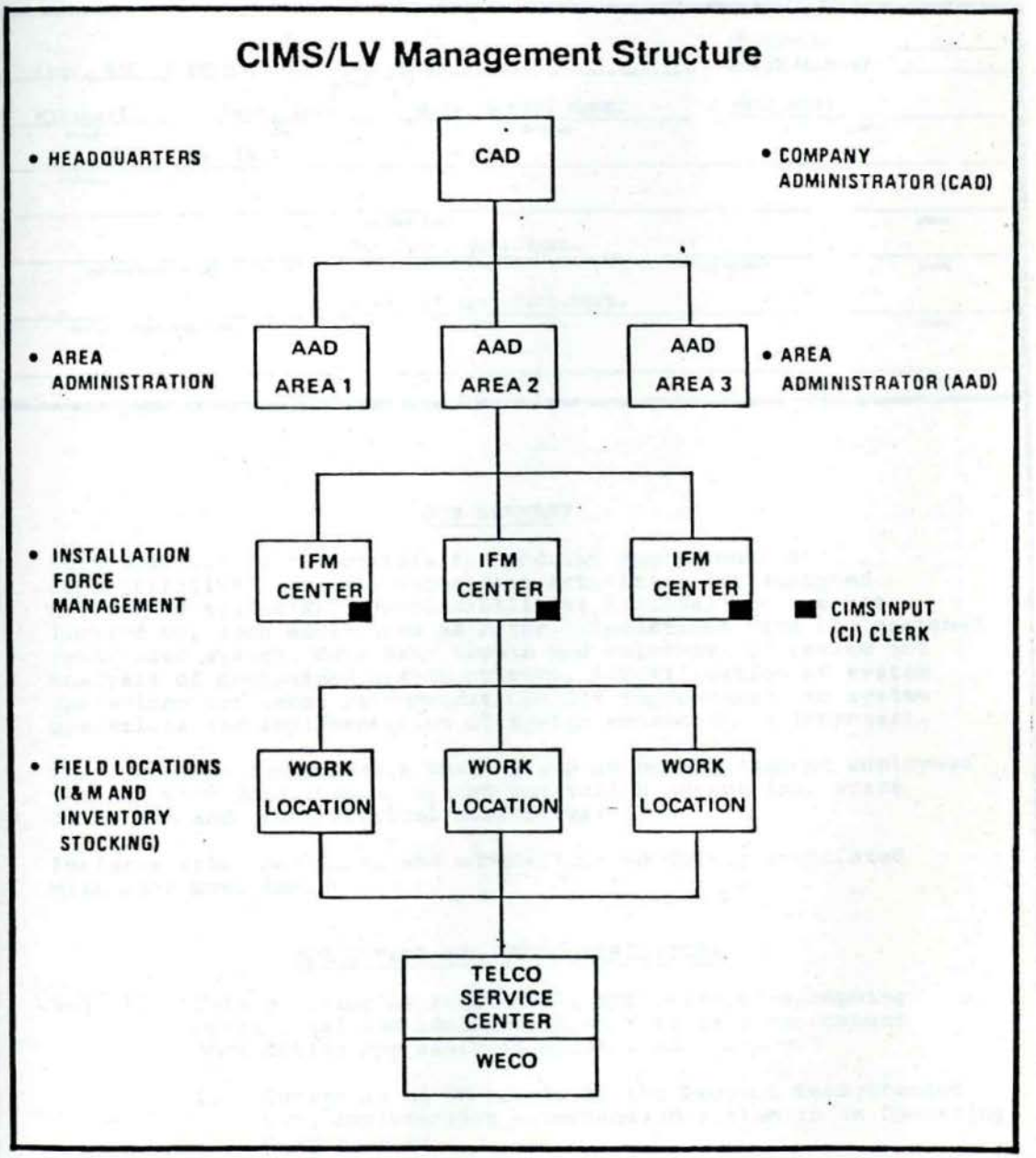
DISADVANTAGES:

1. Expensive. Studying the existing CIMS/LV System requires time, and in all organizations time can be converted to money.
2. Unnecessary barriers. An extensive analysis of an existing system can result in unnecessary barriers or artificial constraints being included in the design of the new system.

Study Facts Collected during the CIMS/LV System Analysis:

1. Organization Chart and Job Description to: (See Exhibit C.)
   a. Determine decision points.
   b. Present information flow. (See Exhibit D, Appendix A.)
   c. Describe inputs/outputs. (See Exhibit E, Appendix B.)
2. Computer configuration and other data processing methods available.
3. Volume of Service Orders, Requisition Orders and Returned Material Tags handled on a monthly

EXHIBIT C


CIMS/LV Management Structure
• HEADQUARTERS
CAD
• COMPANY ADMINISTRATOR (CAD)
• AREA ADMINISTRATION
AAD AREA 1
AAD AREA 2
AAD AREA 3
• AREA ADMINISTRATOR (AAD)
• INSTALLATION FORCE MANAGEMENT
IFM CENTER
IFM CENTER
IFM CENTER
■ CIMS INPUT (CI) CLERK
• FIELD LOCATIONS (I & M AND INVENTORY STOCKING)
WORK LOCATION
WORK LOCATION
WORK LOCATION
TELCO SERVICE CENTER
WECO

POSITION DESCRIPTION

Asst. Stf. Supv.-Material Management (Job Title) — JE Number ____ Old JE Number ____

Missouri (State) | Cent. Svcs. (Dept.) | Auto. & Matl.Mgmt. (Division) | Matl.Mgmt. (Dist.)

915 Olive, Rm. 1614 (Address)

(Incumbent Sign.) (Date)

(Immediate Supv. Sign.) | Stf Spec.-Matl.Mgmt. (Title) | (JE Number) | (Date)

3rd Lev. & Above Supv. Sign. | Dist.Stf.Mgr.-Matl.Mgmt. (Title) | (Date)

Interviewed By (Date)

JOB SUMMARY

This position is responsible for ongoing operational and administrative Materials Management activities for assigned mechanized system(s). Responsibilities include, but are not limited to, such activities as major interactions with the assigned mechanized system, data base inputs and maintenance, review and analysis of mechanized system outputs, identification of system operations problems, recommendations for improvements in system operations and implementation of system enhancements (changes).

The incumbent supervises a small group of non-management employees charged with data inputs, system monitoring activities, error detection and other clerical activities.

Performs other personnel and administrative duties associated with this position.

JOB DUTIES AND RESPONSIBILITIES

60% A. This position is responsible for performing ongoing operational and administrative Materials Management (MM) duties for assigned mechanized systems.

1. Serves as an MM member of the Project Team charged with implementing a mechanized system in an Operating Company area.

a. Assists with the configuration and development of the mechanized system data base.

b. Coordinates interdepartmental and intercompany activities to build the initial data base.

2. Initiates data base reviews for data inputs performed by MM forces. Analyzes and reviews documentation to identify data base accuracy.

   a. Interfaces with MM Results group to jointly develop and publish reports which depict data accuracy performance.

3. Initiates corrective action to solve MM deficiencies as detected during data base reviews:

   a. Develops guidelines and instructions for MM employees performing mechanized system data inputs.

   b. Initiates data base training for MM employees who perform mechanized system data inputs.

   c. Interfaces with GHQ to identify design problems if data errors are system generated.

   d. Provides assistance to field forces in the resolution of service and quality problems.

   e. Reviews system generated factors for reasonableness and makes necessary adjustments.

4. Evaluates new/revised policy, guidelines, and/or procedures to identify mechanized system impacts.

   a. Advises system users of findings.

   b. Initiates system changes or takes appropriate action as required.

5. Administers AT&T or company policy and/or guidelines pertaining to data base security; initiates controls to ensure that data base access is permitted by authorized users only.

6. Performs special studies utilizing system outputs as required.

7. Requests and participates in operational and field reviews, within a designated area for assigned mechanized systems.

8. Develops MM budget requirements for systems operations; monitors systems budget results and explains deviations.

30% B. Supervises a clerical group responsible for data base maintenance (e.g., inputs, error detection, processing, etc.) and the summary and distribution of system reports for assigned mechanized system(s).

1. Supervises data base administration activities and assures that:

   a. Input data is accumulated on a timely basis.

   b. Data inputs are accurate and performed on a timely basis.

   c. Data base configuration changes are implemented.

   d. System operational procedures are properly performed; initiates corrective action as required.

   e. System program additions, deletions and revisions are implemented as required (e.g., company table changes, reference and master file changes, system command changes, etc.).

2. Supervises system report summaries and their distribution and ensure that:

   a. Reports are reviewed for proper formating prior to distribution.

   b. Minimum checks are performed to assure the correctness of recurrent system reports.

   c. Reports are distributed and/or filed on a timely basis.

   d. Exception reports are developed and published as required.

3. Analyzes system printouts and reports to detect data input errors.

   a. Identifies and resolves discrepancies between separate files, printouts, and/or reports (e.g., file mismatch reports, etc.).

   b. Initiates corrective action if errors are created within incumbent's clerical group (e.g., training, supervisory assistance, etc.).

   c. Performs error trend analysis, advises system users and continues to monitor results to ensure that corrective action has been taken by others as required.

10% C. Performs various administrative, training and miscellaneous duties associated with supervisory responsibilities.

1. Implements various Bell System and Company plans in accordance with the duties and responsibilities prescribed for this level of supervision, e.g., Bell System Accident Prevention Plan, Absence Control Plan (including tardiness control), Labor Agreement, Upgrade and Transfer Plan, and New Employee Induction Plan.

2. Negotiates and resolves grievances with local union representatives or escalates to higher management for resolution.

3. Establishes work group objectives and evaluates and appraises subordinate work group performance. Initiates corrective action as required such as training, etc.

4. Determines training requirements, establishes objectives and performs training for subordinate work force.

5. Conducts regular safety reviews and meetings with subordinate work force.

   a. Observes safety as part of the normal inspection of work operations.

   b. Initiates action promptly to correct unsafe acts or observed conditions.

6. Initiates and/or coordinates individual counseling on various personnel items (e.g., EEO/AAP matters, career opportunities, drug/alcohol problems, etc.).

7. Interprets Company policy and practices to subordinate work force. Instructs subordinates on various methods and procedures (e.g., coding expense, voucher and time charges, etc.). Monitors performance to assure compliance and initiates corrective action as required.

SCOPE AND NATURE OF SUPERVISION

This position reports to the Staff Manager- MM along with other Customer Services Supervisors.

The incumbent will generally be located in each Southwestern Bell Administrative Area (Section) which may control locations up to several hundred miles remote from the office of the immediate supervisor. Thus, the incumbent has freedom and will be expected to identify and resolve problems with a minimum of supervision.

The incumbent will have significant interaction with system users and as such will represent supervision as well as Materials Management regarding system operations matters. The incumbent will be required to negotiate system input revisions with first through third level segment managers. Bell System Practices, Mechanized System Operational Practices, corporate and local policies are used as guides in making decisions.

Supervises a force of 1 to 2 clerical subordinates.

JOB DESCRIPTION BACKGROUND

Job Title: Assistant Staff Manager - MM Systems Administration

I. KNOWLEDGE AND EXPERIENCE

A. Formal education required to perform this job:

- High School diploma or equivalent required.
- College degree desirable but not required.
- Good oral and writing skills are required.

B. Courses or programs in and outside the Bell System that are a requirement.

- RMDS - Regional Material Distribution System
- IMOP - Initial Management Orientation Program
- General Supervisory Training
- Communications Workshop
- Analytical Skills Workshop
- Business Meeting Skills
- Management Discussion Skills
- Inventory Management Fundamentals (IMF) - Lisle, Ill.

C. Previous job assignments or experiences (in the Bell System or an outside company) that are required to perform this job:

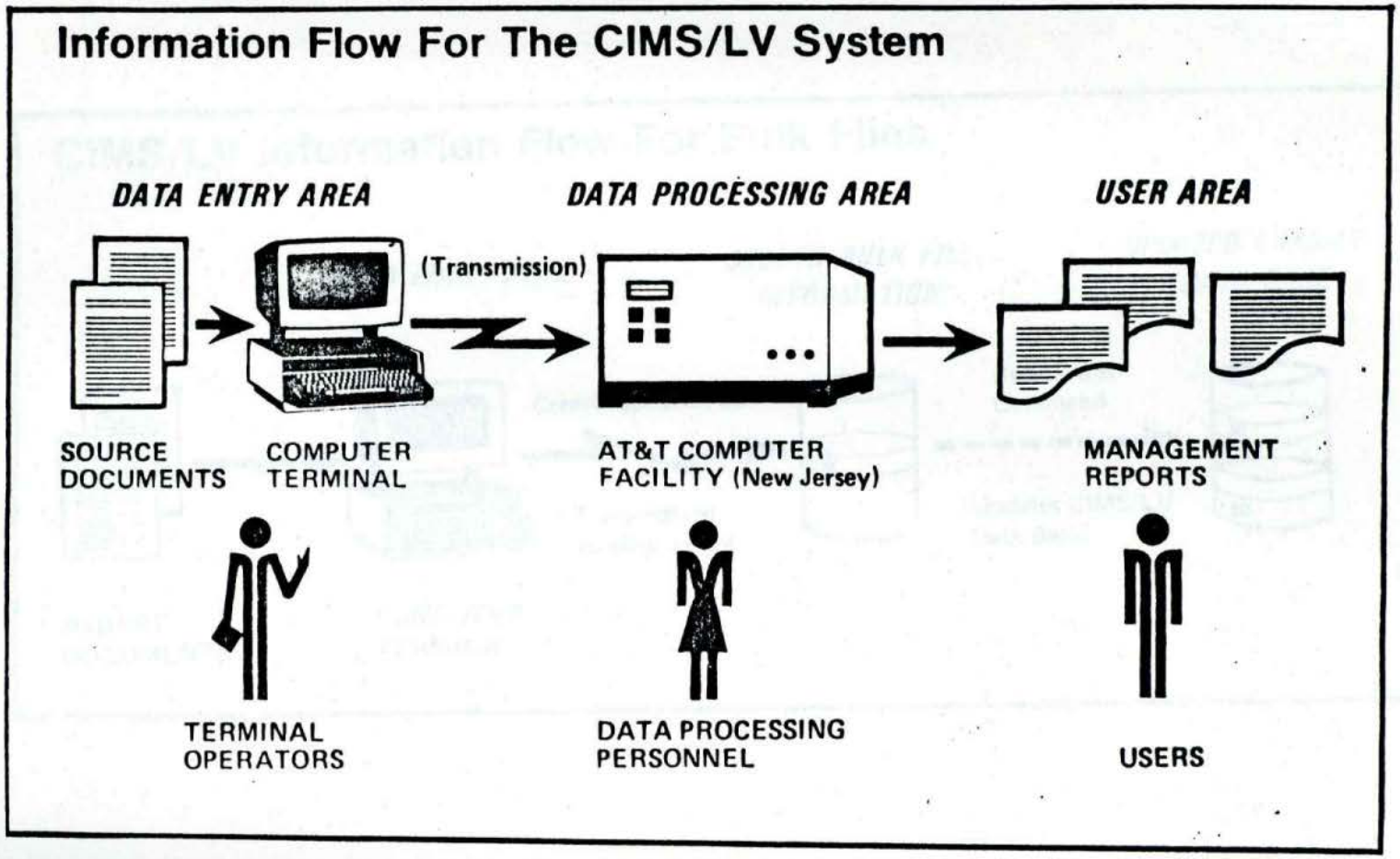
- First level management experience in Materials Management (1 year) or
- First level management experience in Information Systems Department (1 year).

II. GUIDANCE

A. Guidelines, instructions procedures, policy and practices (oral or written) used in performing job duties or to aid incumbent in making decisions:

- Making Management Force Management Plan
- Bell System Practices
- Company methods and procedures
- Bell System Accident Prevention Plan
- Labor Agreement
- Salary Administration Plan
- Mechanized system guidelines and practices
- Affirmative Action Plan
- Upgrade and Transfer Plan

EXHIBIT D
Page 1



CIMS/LV Information Flow For Bulk Files
DATA ENTRY AREA
STORED BULK FILE INFORMATION
UPDATED CIMS/LV DATA BASE
Create/Update/File
Transmission To New Jersey
Bulk From Command
(Updates CIMS/LV Data Base)
SO
SO
EO
SOURCE DOCUMENTS
COMPUTER TERMINAL

CIMS SERVICE ORDER AND EQUIPMENT ORDER
FLOW CHART

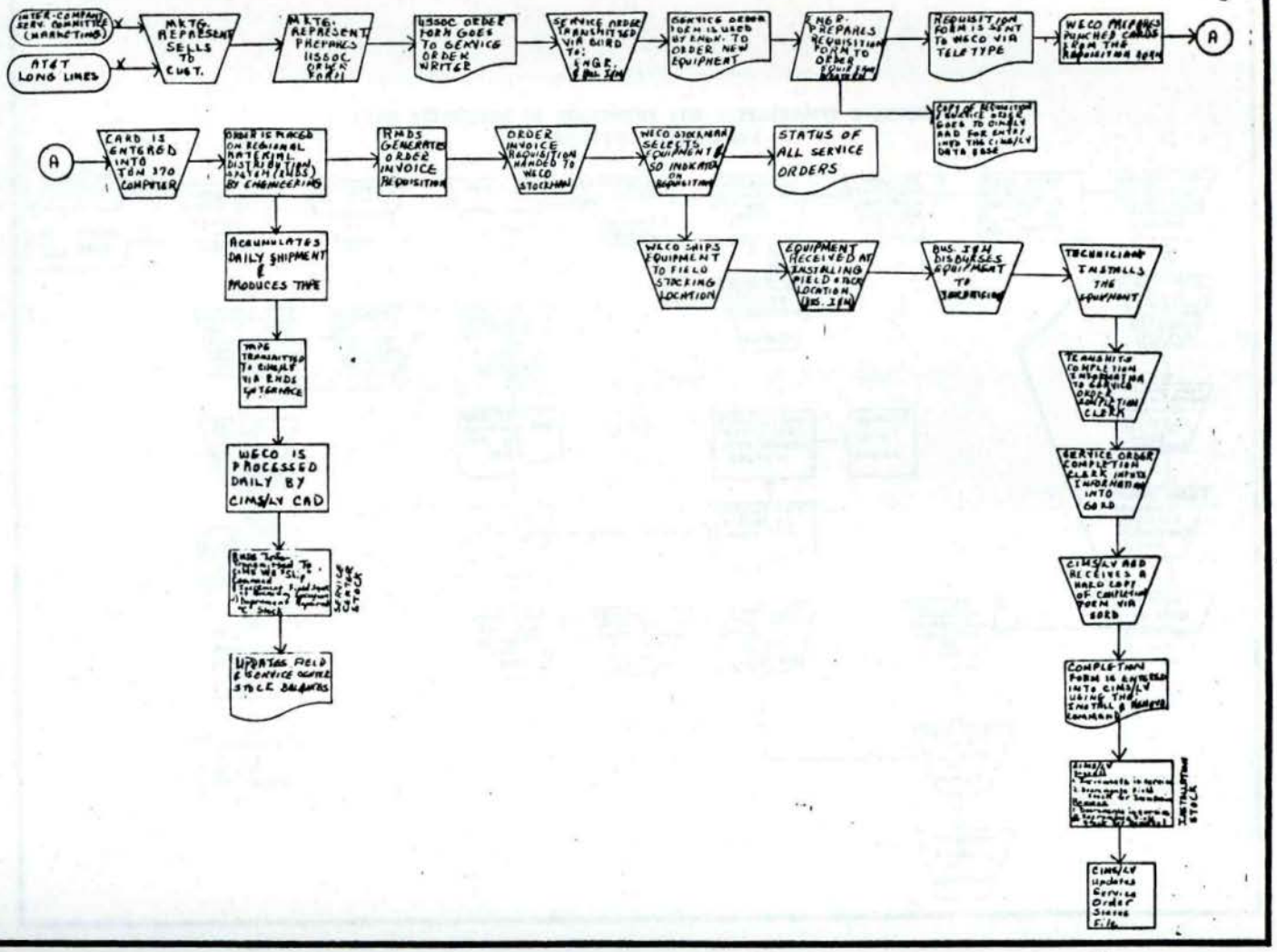


EXHIBIT D
Page 4
(See Appendix A)

CIMS/LV Distribution System
MAIN DISTRIBUTION CENTER
INVENTORY STOCKING LOCATION
INVENTORY STOCKING LOCATION
CUSTOMER
CUSTOMER
CUSTOMER
CUSTOMER
CUSTOMER

EXHIBIT E
(See Appendix B)

basis. (See Exhibit F.)

4. Identification of work groups important to the CIMS/LV Operation.

5. Name and duty of all CIMS/LV users.

6. Name and duty of employees in other work groups associated with the CIMS/LV Operation.

Source of the Study Facts on the CIMS/LV System:

- B. Borage, Stock Maintenance-St. Louis:
- G. Hall, Materials Management-St. Louis:
- A. Gordon, Materials Management-St. Louis:
- C. Long, Methods and Results-St. Louis:
- T. Miller, Business Customer Engineer-St. Louis:
- R. Hodgson, AT&T-New Jersey:
- C. Johnson, AT&T-New Jersey:
- C. Forbes, AT&T-New Jersey:
- Z. Walker, ATT-IS-Dallas:
- A. Huth, Materials Management-St. Louis:
- M. Perkins, Supplies-Topeka:
- S. Camper, Supplies-Oklahoma City:
- H. Field, Supplies-Dallas:
- B. Houston, Materials Management-Arkansas:
- V. Pryor, Materials Management-Houston:
- D. Ellis, Materials Management-San Antonio:
- W. French, Business Customer Engineer-San Antonio:
- R. Dickens, Data Systems-St. Louis:
- J. Patterson, Data Systems-St. Louis:
- S. Mason, PRE-BOSS-St. Louis:
- T. Eason, Stock Maintenance-St. Louis:
- C. Grant, Methods and Procedures-St. Louis:
- D. Gray, Business Customer Engineer-Oklahoma City:
- C. Newton, SORD-St. Louis:
- D. Harris, Transportation-St. Louis:

Use of a questionnaire was also used as a source in factfinding. (See Exhibit G.)

Schedule of Major Events in the Preparation of the Systems Analysis Completion Report:

- Interviewing managers and other users.
- Gather Study Facts.
- Analyzing Study Facts.
- Synthesizing Study Facts.

EXHIBIT F

Volume of Service Orders, Requisition Orders and Returned Material Tags Accumulated on a Monthly Basis

State Admin.	Clerical Support	60% OCS Post-Divestiture In-Service Orders	Estimate of OCS Post-Divestiture Field Orders Received Monthly	Percentage of Service Orders Received Monthly	Percentage of Returned Material Tags Received Monthly	Percentage of Returned Material Tags Requiring Follow-up Monthly	Number of Requisitions Received Monthly
ARK.	1	60%	Oklahoma OCS Engineering Center Covering: -ARK. -KAN. -MO. -OK. Total=657 Orders	20	10	5	15
KAN.	2	60%		50	20	10	40
MO.	2	60%		125	50	25	100
OK.	1	60%		100	40	20	90
TEXAS							
-DLS.	3	60%	Texas OCS Engineering Center Covering: -DLS. -HOU. -SA. Total=4159 Orders	Texas 1387	Texas 1835	Texas 675	Texas 1350
-HOU.	5	60%					
-SA.	4	60%					

QUESTIONNAIRE TO AID IN DETERMINING THE FUTURE OF THE CIMS/LV SYSTEM OR ITS REPLACEMENT

1. Q. What do you understand to be the objectives of the CIMS/LV System?

   A. To summarize this question see Question #2.

2. Q. The published and implied design objectives of CIMS/LV are listed below. How well are these objectives being met? Please apply a rating from one to ten to each objective. (1 = objective is not being met at all; 10 = the objective is being met very well)

   a.) 5 To permit management to maintain accurate inventory totals of high cost, low volume equipment at all locations.

   b.) 6 To track movement of this type of equipment from the time of ordering through receipt, installation, removal and return to company storeroom or warehouse.

   c.) 5 To provide monthly recommendations on the amount of spare equipment that should be kept at each location.

d.) 5 To identify locations that are either understocked or overstocked.

e.) 5 To monitor repaired and unrepaired "C" stock.

f.) 5 To increase the utilization of equipment investment by facilitating the reuse of "C" stock.

g.) 5 To reduce field stock investment and carrying charges.

3. Q. For each objective which is not being met to your satisfaction, please state why, in your opinion, it is not being met. Please try to distinguish between causes that may be directly related to the mechanized design versus causes that may be related to manual procedures that are associated with the use of CIMS/LV.

A. Mechanized - No system interface for substitutions/switches on equipment
- RMDS-CIMS/LV Interface (WECO Ships) needs to be enhanced
- USOC and Equipment system tables need to be updated
- House IDs changed by Western Electric after receipt of a requisition needs reviewing.

(See Attachment)

4. Q. What improvements in the design of the mechanized system would you recommend?

A. System tables should contain spare stock loaded against truck stock and street locations, but reports to geographic stocking district. (System Hierarchy)

System should provide complete explosion of USOCs for Maintenance Recommendation purposes: circuit cards in comptrollers, power supply, etc.

Need Equipment substitution/switching table programmed into CIMS/LV.

(See Attached)

3. Q. Continued

Manual - Proper application of Returned Material Tags by Network Field forces is needed. (Inventories will improve when this takes place),

- Coordinate communication link between CIMS/LV AAD and Corporate Purchasing on Non-Stocked items.
- Need some method of replenishing defective material when a claim is filed. (Usually the defective piece of equipment is subdized by pulling the equipment from maintenance spare).
- Network Field forces fail to notify CIMS/LV AAD when equipment is reused, returned or borrowed.
- Inventory forms especially for CIMS/LV inventories are needed.

4. Q. Continued

Need to enhance RMDS-CIMS/LV Interface to accept substitutions/switches, overships, etc. of equipment.

All items, such as TP410755 parts connected to 4320AAA Teleprinter used for maintenance spare should be tracked in the MIIS system. (CIMS/LV is unable to track such items correctly, however, MIIS would provide accurate historical data on the usage of each item).

In-Service quantities are already tracked in the CRIS data base, therefore, CIMS/LV should only track spare equipment.

Instead of the Network Field forces completing a Returned Material Tag, a Vu-set should be maintained at each work location and used to report field activity into the CIMS/LV data base.

5. Q. What changes would you recommend in the manual procedures associated with the use of CIMS/LV?

A. Revise inventory forms to meet the needs of the CIMS/LV users. Scheduled Administrative seminars. Training classes to educate Network Field forces.

6. Q. Do you feel that the CIMS/LV System should be continued? If not, why?

A.

	TOTAL	MANAGEMENT	OCCUPATIONAL
YES	8	2	6
YES, ENHANCEMENTS	4	3	1
NO	3	2	1
QUESTIONABLE	1	0	1
GRAND TOTAL	16	7	9

No, system isn't meeting its designed objectives.

7. Q. If use of the CIMS/LV System were to be discontinued, what other method would you use to replace the functions that CIMS/LV handles now?

A. Use a system such as MIIS. Use a system such as CRIS. No other system available to replace CIMS/LV.

Engineering Group would have to absorb all the responsibilities of CIMS/LV.

8. Q. Do the costs of using CIMS/LV justify the savings or service improvements? Give Examples.

A.

	TOTAL	MANAGEMENT	OCCUPATIONAL
YES	9	3	6
NO	3	3	0
QUESTIONABLE	4	1	3
GRAND TOTAL	16	7	9

8. Q. Continued

EXAMPLES:

- Arkansas CIMS/LV AAD is co-located with the warehouse and also responsible for maintaining data and teletype equipment.
- San Antonio Equipment Engineer uses the data from the CIMS/LV data base to track equipment and to solve problems on orders. (faster)
- CIMS/LV is utilized by the AADs to locate equipment quantities at the different work locations.
- Maintenance Spare tracked by CIMS/LV is utilized when new equipment ordered by Western Electric is on back-order.

9. Q. If your answer to the previous question is "No," would reducing the CIMS/LV costs appreciably change your outlook? How much would the cost have to be reduced?

A.

	TOTAL	MANAGEMENT	OCCUPATIONAL
NO	3	3	0
QUESTIONABLE	4	1	3
YES	9	3	6
GRAND TOTAL	16	7	9

Not enough cost data available to CIMS/LV users to provide an estimate of the reduced cost.

Summary

Name: Sandra A. Harris
Location:
Phone:
Department: Cen. Servs.

CIMS/LV QUESTIONNAIRE

EMPLOYEES	NUMBER OF REPLIES	AVERAGE RATING - QUESTION #2 a	b	c	d	e	f	g
MANAGERS	7	3	4	4	4	3	4	3
OCCUPATIONAL	9	7	7	6	6	6	7	6
TOTAL	16	5	6	5	5	5	5	5

- Communicating Findings.

The above schedule was initiated in October, 1983 and was completed in June, 1984.

Major Problems Identified:

1. Poor communication between Network Field Forces, Engineering Group and the Materials Management personnel.

2. Network Field Forces order equipment without informing the Materials Management CIMS/LV Administrators.

3. Network Field Forces and the Materials Management Supplies Attendants, sometimes fail to attach Returned Material Tags to equipment being returned to the Corporate Warehouse.

4. Problem with the correspondence flow between upper level managers and lower level managers in both the Network Field Force and the Materials Management Organizations.

PHASE II: GENERAL SYSTEMS DESIGN

INTRODUCTION

The General Systems Design is concerned with the development of specifications for the proposed new system or subsystem which meet the requirements specified during the systems analysis phase. Eventually, therefore, the systems design becomes a detailed elaboration of the Systems Analysis Completion Report.

THE DESIGN PROCESS

In analyzing the design process we will define what it means to design, summarize the elements of knowledge the systems analyst requires for designing a system, and describe the basic steps in the design process.

Systems design can be defined as the drawing, planning, sketching, or arranging of many separate elements into a viable, unified whole. Whereas the systems analysis phase answers the questions of what the system is doing and what it should be doing to meet user requirements, the systems design phase is concerned with how the system is developed to meet these requirements. In the design process, the analyst develops alternative solutions and eventually ascertains the best design solution.

BROAD DESIGN OF DESIGN BLOCKS

At a broad systems design level, conceptual specifications are prepared which outline a complete systems design proposal. At this point, the design is reviewed against its user requirements and feasibility aspects (TELOS) and can be cancelled, modified, or continued. If the systems work continues, then the next level of design is concerned with detailed technical design specification. Once again, based on further systems work and additional information, a decision is made by management to cancel, modify, or continue the project. If the project is continued or modified, then the next step in systems work is implementation.

To design a system the analyst must possess knowledge related to the following subjects:

1. Organizational Resources. The five basic resources of any organization may be referred to as people, machines, material, money, and methods. One of the objectives of systems design is to utilize these resources as effectively as possible.
2. User Information Requirements. During the systems analysis phase, the information requirements of potential users of a system

are identified and described. The primary purpose of the system is to provide information to satisfy these requirements.

3. Humanizing Requirements. The user's ability to interact with the system and to get from it what the user wants, in an understandable form must be a paramount design consideration. Systems should be designed to respond quickly to correct mistakes. Systems should be flexible in meeting the changing needs of users. Safeguards and security procedures should be installed to guard against the misuse of information about individuals and to meet legal and human needs for accuracy, privacy, and confidentiality. The system should be designed to assist, rather than to play games with the user. No matter how technically perfect a system is made, for it to be successful, confidence and acceptance must be experienced by its users.

4. Systems Requirements. Systems requirements or objectives are, for the most part, also defined during systems analysis. This set of requirements includes all of managements desires or demands on the system other than the specific information outputs. Systems require-

ments include: 1) performance, 2) cost, 3) reliability, 4) maintainability, 5) flexibility, 6) installation schedule, 7) expected growth potential, and 8) anticipated life expectancy.

5. Methods for Data Processing. The four general methods for processing data includes: 1) manual processing, 2) electromechanical processing, 3) data entry, and 4) computer processing. The capabilities of these methods for performing operations on data affect the specific design and operation of each system.

6. Data Operations. The basic operations that can be performed on data are classified as: 1) capturing, 2) verifying, 3) classifying, 4) arranging, 5) summarizing, 6) calculating, 7) storing, 8) retrieving, 9) reproducing, and 10) disseminating/communicating. All systems are composed of some combination of these operations.

7. Design Tools. During the design process the analyst is assisted greatly by the use of flowcharts, decision tables, and modeling techniques. Flowcharting is of utmost importance in developing segments of the system which are heavily flow or movement

oriented. Technical data processing for example, lends itself to being designed efficiently through the analyst's use of flowcharting. Decision tables are oriented to the efficient design of tactical and strategic requirements. The use of models provides the analyst with an opportunity to experiment with different design alternatives. While it is possible to effect a systems design without using any of these tools and techniques, usually the analyst finds that they are not only beneficial but, in many instances, essential.

The basic steps in the design process can be termed:

- Defining the Systems Goal. Defining the systems goal results from reviewing and evaluating the requirements described in the Systems Analysis Completion Report. It is important to note that the systems goal is not always equated with a specific user information requirement. The goal of a system can usually be defined by abstracting certain characteristics from all of the information requirements.
- Develop a Conceptual Model. Developing a conceptual design model of a system is the second

step in the design process. Often, if the analyst is experiencing difficulty in identifying a system's goal, then an attempt to develop a conceptual design model will aid in defining the goal.

Once the analyst establishes a conceptual model of the proposed system, he or she begins to make it more pragmatic by applying the additional systems requirements and considering the available organizational resources.

- Applying Organizational Constraints. Developing and operating information systems requires the extensive use of organizational resources. Many activities are pursued within the organization which also require use of organizational resources. Thus, the information system must compete with these other activities to obtain necessary resources. Organizational resources are usually allocated to those activities which will provide the greatest cost/effectiveness to the organization.

Applying systems objectives to the development, performance, or operation of the information system is management's technique for attempting to obtain the optimum cost/effectiveness from the information system. This is also applicable

when the analyst must utilize data processing methods that are less than what available technology allows.

The task of obtaining a good or optimum mix of resources and objectives is an extremely significant problem confronting the analyst in the systems design phase. The overall requirements of a particular systems design are usually quite complex, vary widely, and depend on specific objectives.

- Defining Data Processing Activities. Thus far it has been assumed that the identified systems requirements, and users' information needs, must be met by the design of a new system. However, this is not always true. The analyst should be aware of the other available alternatives. Moveover, when a new systems design is required, there are additional decisions to be made concerning the manner in which the new system is to be developed and operated.

BASIC DESIGN ALTERNATIVES

The analyst has at least three basic design alternatives each time a set of systems and user requirements are evaluated. 1) To recommend doing nothing. In every systems design as to how to satisfy users' information requirements or requests

for systems improvements, the analyst has an opportunity to recommend that no action be taken at this time. The reasons for choosing this alternative include:

- Poor identification and definition of requirements or needs.
- A determination that it is infeasible to develop a meaningful system or solution to the user's needs.
- Other systems requests have higher priorities and developmental resources are fully allocated.
- The user's needs as stated are not real needs.

2) Modify an Existing System Alternative. The majority of all systems investigations conducted in organizations include some consideration of existing systems and subsystems. To effectively satisfy new or revised user requirements, the analyst often recommends modifying existing systems rather than designing new systems. Depending on the size of the organization and the particular subsystem being evaluated, systems modifications can have a larger impact on an organization than the development of an entirely new subsystem.

3) Design a New System Alternative. The final alternative available to the analyst for recommenda-

tion is to design a new system to satisfy users' requirements. This alternative is obviously the most complex and difficult solution to implement. This alternative can be viewed as a combination of two further choices of action. When an analyst recommends that a new system be implemented, a decision must be made whether this system is to be developed from the very beginning, or whether an acceptable system can be purchased from other sources. Traditionally, this is termed the "make or buy" decision.

Make or buy decisions are not new to the management process. Manufacturing management continually review their operations to determine if a certain product or assembly can be manufactured as efficiently as it can be purchased. However, in the area of information systems, the make or buy decision is becoming increasingly important. The development of computer-based information systems is an expensive proposition in any organization when weighed against the resources available to that organization. Until recently, only very large organizations could afford extensive computer-based systems development.

But over time, as the manufacturers of data

processing equipment, particularly computers, were able to reduce the initial cost of equipment, many smaller organizations acquired the equipment necessary to process their own data.

The make or buy decision is less important in large organizations or where there is an information requirement somewhat unique or unusual. In most medium-to-small-size organizations, however, the choice between making or buying, for at least the basic data processing system, represents a very important decision.

The following are the advantages and disadvantages of purchasing or building a specific data processing system or subsystem.

The advantages of In-House Development:

a) System tailored to requirements.
b) High degree of design integration possible.
c) Optimum use of organizational resources possible.
d) Advanced state of the art techniques utilized.

The advantages of Purchase System:

a) System tested and proven.
b) Implementation time reduced.
c) Advantages/disadvantages known.
d) Developmental resources freed for other efforts.
e) Usually less cost.

The disadvantages of In-House Development:

a) Lengthy developmental time.
b) Costs and benefits uncertain.
c) Developmental talents are scarce and not always available.
d) Debugging and other problems occur long after implementation.

e) Usually more expensive.

The disadvantages of Purchase System:

a) Does not meet all requirements.
b) Inefficient use of resources.
c) Maintenance and modification are a greater problem.
d) Less integration with other systems.
e) Demoralizing to developmental staff.
f) Generally, not latest state of the art.

PREPARING THE SYSTEMS DESIGN PROPOSAL REPORT

The General Systems Design Proposal Report is prepared to communicate to management and users in the organization how, at a broad level, the designed system will satisfy their information and data processing requirements. The following guidelines are offered for assistance to the analyst in preparing the General Systems Design Proposal Report:

1. Restate the reason(s) for initiating systems work, including specific objectives, and relate all original user requirements and objectives to the present systems design proposals.
2. Prepare a concise but thorough model of the proposed systems design. Always try to include design alternatives from which management can make choices, rather than presenting only one approach. Not only does the presentation of alternatives allow management to

choose, but often it can be shown that a different alternative will make a significantly different impact on the organization.

3. Show all of the resources required to implement and maintain each alternative.
4. Identify any critical assumptions or unresolved problems that may affect the final systems design.

GUIDELINES AND PRINCIPLES FOR SYSTEMS DESIGN

An information system is composed of a series of activities directed to produce information from data. These activities can be performed manually or by a machine. Where these activities are performed is a determination made by the analyst in the design process. This determination is guided by a knowledge of the capabilities of existing resources and the desired cost/effectiveness for the proposed system.

Many experienced analysts believe that obtaining an adequate definition of user requirements is the key activity in preparing design alternatives. They argue that if user requirements, in the form of detail specifications, are miscommunicated or omitted from the proposed system, costly modifications and corrections will be required later, and users will fail to gain many of the possible

benefits of the proposed system.

One approach that is directed toward defining users' needs is HIPO.[2] HIPO, an acronym for hierarchy plus input, processing, and output, is a method of describing graphically a system program, or procedure in terms of functions to be performed.

The hierarchy portion of HIPO involves a tree structure of functions or actions. Top-level functions contain the control logic. Lower-level functions, which are subsets of higher-level functions, contain increasing degrees of detail.

Each function in the structure is named by an objective or by the data affected (e.g., payroll master, year-to-date gross pay, overtime rate, etc.), and described by a verb or an action (e.g., update, compute, revise, etc.). To complete the visual description, every function has a corresponding input, process, and output.

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[2]Summarized from Martha Nyvall Jones, "HIPO for Developing Specifications," Datamation, March, 1976, pp. 112-114 and 121-125. Reprinted with permission of Datamation®, copyright 1976 by Technical Publishing Company, Greenwich, Connecticut 06830.

To begin defining the functions required, the analyst should discuss with users the generalities and desired outputs of the proposed system. By clarifying vague areas, a preliminary list of probable functions can be established. Working from this tentative hierarchy of functions the analyst should next determine what circumstances will trigger the performance of each function, what data will be acted on, and what output will be produced from the processing that will occur. At this point the analyst should be alert to the appearance of new functions and the need for alteration of relationships among functions. Control functions should be established at upper levels; function names should reflect the actions taking place and the objects being acted upon; and the hierarchy should have the correct number of levels and subfunctions. Once the analyst is satisfied that there is little more that can be revised, a walk-through meeting should be scheduled with the user. At this time, HIPO is evaluated critically, from top to bottom, for errors and omissions.

For illustration purposes, the following is an elaboration of the Systems Analysis Completion Report:

CENTRALIZED INVENTORY MANAGEMENT
SYSTEM/LOW VOLUME (CIMS/LV)

Phase II: General Systems Design

Broad design of design blocks. To design a system the analyst must possess knowledge related to the following subjects:

- Organizational Resources-basic resources of any organization referred to as people, machines, material, money, and methods.

- User Information Requirements-the information requirements of potential users of a system are identified and described.

- Humanizing Requirements-the user's ability to interact with the system and to get from it what the user wants, in an understandable form.

- Systems Requirements-managements desires or demands on the system other than the specific information outputs. Systems requirements include: performance, cost, reliability, maintainability, flexibility, installation schedule, expected growth potential, and anticipated life expectancy.

- Methods for Data Processing-general methods for processing data includes: manual processing, electromechanical processing, data entry, and computer processing.

- Data Operations-basic operations performed on data are classified as capturing, verifying, classifying, arranging, summarizing, calculating, storing, retrieving, reproducting, and disseminating/communicating. All systems are composed of some combination of these operations.

- Design Tools-during the design process the analyst is assisted greatly by the use of flowcharts, decision tables, and modeling techniques. Flowcharting is of utmost importance in developing segments of the system which are heavily flow or movement oriented. Decision tables are oriented to the efficient design of tactical and strategic requirements. The use of models provides the

analyst with an opportunity to experiment with different design alternatives. While it is possible to effect a systems design without using any of these tools and techniques, usually the analyst finds that they are not only beneficial but, in many instances, essential.

Presentation of Design Alternatives. Each time a set of systems and user requirements are evaluated the analyst has at least three basic design alternatives:

1. To recommend doing nothing.
2. Modify an Existing System Alternative.
3. Design a New System Alternative.

Listed are the advantages and disadvantages of purchasing or building a specific data processing system or subsystem.

Advantages of In-House Development:

- System tailored to requirements.
- High degree of design integration possible.
- Optimum use of organizational resources possible.
- Advanced state of the art techniques utilized.

Advantages of Purchasing a System:

- System tested and proven.
- Advantages/disadvantages known.
- Developmental resources freed for other efforts.
- Usually less cost.

Disadvantages of In-House Development:

- Lengthy developmental time.
- Costs and benefits uncertain.
- Developmental talents are scarce and not always available.
- Debugging and other problems occur long after implementation.
- Usually more expensive.

Disadvantages of Purchasing a System:

- Does not meet all requirements.
- Inefficient use of resources.
- Maintenance and modification are a greater problem.
- Less integration with other systems.
- Demoralizing to developmental staff.
- Generally, not latest state of the art.

The following are the basic design alternatives which have been selected for managements consideration:

- Continue with the current CIMS/LV System.
- Bring the current CIMS/LV Operation In-House to save money, but continue with AT&T-Information Systems for software support.
- Develop a new In-House System.
- Purchase a new System.
- Enhance the current CIMS/LV System.
- Move the functions of the CIMS/LV System to a newly created operating system.

In analyzing the "Problem Areas of the CIMS/LV System Operation," nothing was found in the design of the system which indicated it was the cause of the CIMS/LV System to fail in meeting its objectives. However, the analysis uncovered areas, whereas the users of the system were failing to utilize it to its highest potential by: 1) failing to reconcile all error messages generated by the CIMS/LV System, 2) failing to handle all Returned Material Tags properly, 3) lack of coordination between the administrative staffs regarding the system, 4) failure of the Methods and Procedures group to keep the Returned Material Tag Practice up-to-date and

5) failure of the Network I&M staff to revise the "Returned Material Tag" used by its field personnel. (See Exhibit H.)

A recommendation has been presented to management to continue with the use of the CIMS/LV System as it is based upon the findings resulting from the study done on the "Problem Areas of the CIMS/LV Operation."

It has also been recommended to management that AT&T-Information Systems should continue to maintain the software support of the CIMS/LV System.

NOTE: Recommendation to management regarding the CIMS/LV System for the latter part of 1984.

- Bring the CIMS/LV System In-House, but maintain AT&T-Information Systems for software support. Bringing the system In-House would cut operational cost by 50%. (See Exhibit I.)
- Move the functions of the CIMS/LV System to a Southwestern Bell operated system called the Management Inventory Information System (MIIS).

Problem Areas in the CIMS/LV Operation

Problem #1: No RMDS-CIMS/LV System interface for substitutions/ switches and unmatched quantities of equipment.

Cause: RMDS-CIMS/LV System interface is designed to generate error messages whenever an order fails to match the quantity ordered or inappropriate list codes are substituted on a particular requisition.

Examples: 212AL1/2 IN COMPANY DATABASE BUT NOT ON 51950184
NO ITEMS IN THE ORDER WERE SHIPPED
51950184 SHIP NOT ENTERED

Equipment type does not appear on the Southwestern Bell requisition order stored in the CIMS/LV data base.

212ARL1A NOT SHIPPED - EXCEEDS QUANTITY ORDERED
NO ITEMS IN THE ORDER WERE SHIPPED
51966684 SHIP NOT ENTERED.

Quantity of equipment shipped by Western Electric is greater than the amount requested on the order in CIMS/LV. If the order is incorrect, it should be updated to reflect the amount sent (MOD EO or MOD SO) and then shipped manually (SHIP). If the CIMS/LV order is correct, the equipment should be returned to the Corporate Warehouse (RET) or sent to another location that needs the equipment (TRAN or EO). In the meantime, an adjustment should be made to the spare stock total at the receiving location (ADJ) to reflect the current inventory level.

50916589 PARTIAL SHIP ENTERED.

Western Electric has started shipment on a requisition order, but not all items were shipped.

50929586 IS INVALID REQUISITION NUMBER
THE FOLLOWING ITEMS IN THE DATABASE WERE REQUESTED

EQUIPMENT	NEW	REPC	CWSS	NOTES
47B1	1	0	0	

50929586 SHIP NOT ENTERED.

Western Electric shipment data cannot find a matching requisition number in the CIMS/LV data base.

NO ITEMS IN THE DATABASE WERE REQUESTED
50921699 SHIP NOT ENTERED

Equipment items listed in the CIMS/LV data base were not requested by Western Electric, therefore the items were not shipped by Western Electric.

Negative Effects: -Reconciling the error messages is time-consuming
-Extensive research such as: telephone calls, use of different manuals and BISPs, etc. is sometimes required to reconcile errors
-Work efforts have to sometimes be duplicated in order to reconcile errors.

Solution: -CIMS/LV Area Administrators and clerical staff must adhere to the present BISPs, CIMS/LV Flipchart, User's Guide, OTSS Reports Manual and CIMS/LV Training Manual.

-Educate both the Materials Management employees as well as the Network Field Forces in the correct application of the CIMS/LV Operation.

-Have a full-time dedicated staff of people to run the CIMS/LV Operation.

-CIMS/LV Area Administrators and clerical staff must form a good working relationship with all work groups (Engineering Group, Network Field Forces and the Materials Management/Network-Supply Attendants) in order to receive assistance in reconciling problems with requisitions.

Problem #2: Improper Handling of Returned Material Tag

Causes: -Network Field Forces are either not completing the Returned Material Tags or failing to complete sections of the tag which contributes to the accuracy of the CIMS/LV data base.

-Returned Material Tags are not being completed on:

Disconnected Equipment
Transfer Equipmnet (removing)
Reused Equipment
Maintenance Replacement of Equipment (failed in-service)
Returned Equipment (excess stock)

-Network Field forces and the supply attendants are returning equipment to the Corporate Warehouse without a tag.

-Corporate Warehouse personnel in some cases are accepting returned equipment without a Returned Material Tag.

-When tagged equipment is returned to the Corporate Warehouse, the personnel are failing to remove and forward copy C of the Returned Material Tag to the CIMS/LV Area Administrator on a daily basis.

-There's a question as to which work group (SWB Corporate Warehouse personnel or CIMS/LV AAD clerial staff) should be responsible for accepting (or loading) copy C of the Returned Material Tag into the CIMS/LV System.

Negative Effects:

-Untagged equipment is lost in Corporate Warehouse "C" Stock

-Untagged equipment causes inventories to be incorrect

-Difficult to follow the movement of untagged equipment in CIMS/LV data base

-Untagged equipment contributes to the inaccuracy of the Monthly Maintenance Reports

-Stock-piling takes place when equipment is untagged

-Incomplete listing of the Equipment Type/List Number section on the tag causes incorrect equipment tracking data to be entered into the CIMS/LV data base.

-Teletype equipment returned to the Telephone Company Storeroom must also provide all associated USOC Option(s) which make up a complete terminal. When TTY Equipment/USOC Option(s) are not listed on the tag, these TP-parts are automatically lost in the Corporate Warehouse inventory.

Solution: Educate Field Forces regarding the importance of completing the Returned Material Tag.

Enforce strict adherence to the Bell System Practice, SECTION 590-009-100.

Hold annual seminars with the Network Field Forces and Materials Management personnel.

Problem #3: In order to fill a requisition Stock Maintenance has to sometimes source part of the stock from another Corporate Warehouse. As a result the House ID on the original requisition number is changed.

Causes: Original requisitions are generated by the OCS Engineering group and copies are forwarded to the Regional Stock Maintenance group and the CIMS/LV Area Administrators.

The CIMS/LV Area Administrator matches the orignal requisition against a Service Order and this information is entered into the CIMS/LV data base.

Stock Maintenance fills the requisition order and enters the requisition into the Timeshare RMDS System if all the items are stocked at the same Corporate Warehouse. Sometimes in order for Stock Maintenance to meet a quantity demand, part of the stock has to be sourced from another Corporate

Warehouse. This means the first two numbers of the requisition is changed and the CIMS/LV Area Administrator is never informed of the change.

When WECO (RMDS-CIMS/LV interface) is processed an error message is generated.

Example: Original Requisition Order Number:

```
50900228    BACKORDER INFORMATION
THE FOLLOWING ITEMS WERE BACKORDERED
EQUIPMENT                    QTY
TP403400                       1
TP410015                       2
40P102ZZ                       1

TP403400  NEW SUBSTITUTED FOR REPC.
TP410015  IN COMPANY DATABASE BUT NOT ON 50900228
40P102ZZ  NEW SUBSTITUTED FOR REPC.
50900228  BACKORDER ENTERED
```

Sourced Requisition Order Number:

```
52900228  IS INVALID REQUISITION NUMBER
TP408065  IS INVALID EQUIP. FOR S.W. BELL
THE FOLLOWING ITEMS IN THE DATABASE WERE REQUESTED
EQUIPMENT                    NEW REPC CWSS     NOTES
212AL1/2                       1    0    0
40CAB251ZZ                     1    0    0
40CAB901AJ                     2    0    0
40C204BA                       1    0    0
40DL291BS                      1    0    0
40K1010AK                      1    0    0
40PSU101                       1    0    0
52900228    SHIP NOT ENTERED
```

Each Sourced Equipment item associated with Requisition 52900228 will have to be shipped manually in the CIMS/LV data base:

```
INWARD MOVEMENT FOR OKLA
                    EXSH                                        SHIP
    SOURCE          DATE SEND LOCN    EQUIP       Q STYP    DATE
                                                              BO Q*
E1 52900228  04/21 KCSC
 1                                    212AL1/2    1 NEW     04/09
 2                                    40CAB251ZZ  1 NEW     04/09
 3                                    40CAB901J   2 NEW     04/09
 4                                    40C204BA    1 NEW     04/09
 5                                    40DL291BS   1 NEW     04/09
 6                                    40K101CAK   1 NEW     04/09
 7                                    40PSU101    1 NEW     04/09
E18 50900228 04/21 KCSC
 5                                    40MN101AA   1 NEW     04/09
 7                                    TP405563    1 NEW     04/09
 8                                    TP410018    1 NEW     04/09
10                                    TP410770    1 NEW     04/09
11                                    40CAB201ZZ  1 NEW     04/09
12                                    40P102ZZ    1 NEW       1 *
```

13	TP400645	1	NEW	04/09
15	40PWU102	1	NEW	04/09
17	TP403400	1	NEW	1 *
19	TP410015	3	NEW	04/10

Negative Effects: Requires extra time and effort to reconcile system errors.

Solution: Sourcing of stocked items is only done on 5% of all requisition orders filled by the Stock Maintenance group. Since the sourcing level is so low, on requisition orders, it would require less effort by the CIMS/LV clerical staff to reconcile the error messages than it would for the Stock Maintenance group to mail sourcing corrections/changes to all CIMS/LV Area Administraotrs. In other words, the CIMS/LV Area Administrator and clerical staff should be responsible for reconciling error messages generated due to sourcing.

Problem #4: "Returned Material Tag" - SD-44-507.1 (7-82) and the Bell System Practice, Section 590-009-100, Issue 2, January 1983 need to be revised.

Cause: Due to divestiture, (January 1, 1984) Southwestern Bell now operates under a different environment. Many functions in the field have changed, such as the Returned Material Tag and the instructions for the Tag, BSP Section 590-009-100. Both the Tag and the Practice contain obsolete information.

Example:

Returned Material Tag

Telco Name_____ | TAG No.

Carton No. Of | Date

Returned From (Work Ctr. Loc.) *

Technician's Name

Control Supv's. Name | Tel. No.

No. Of Items Returned | Area No. (Geo. Loc. Code)

Equipment Type/List No.

Return Status (Class)
- ☐ Working Station (WS)
- ☐ Defective - Mtce. Repl. (FS)
- ☐ Defective - Other (FR)
- ☐ Unused/Unopened Equip.

Reason For Return
- ☐ Service Order Disc.
- ☐ Job Cancelled
- ☐ Defective On Arrival
- ☐ Installation Failure
- ☐ Failed In Service
- ☐ Surplus

Equipment
- ☐ Customer
- ☐ Official *

☐ GEC. 8400 Applies | Equip. Warranty Date

If Failed Replaced With Equip. Type/List No.

Service Order No. | USSO Or CLO No.

Ckt. No./Trs. Ticket No.

* Areas that changed due to divestiture.

Negative Effects: -Issue 2, SECTION 590-009-100 of the Bell System Practice gives instructions to the technician/supply attendant to complete and attach a tag to all data sets, data terminals, and other communications equipment and/or protective packaging cartons. The Practice makes no mention of teletype equipment showing all USOC Option(s) that make up a complete terminal. The - 7/82 "Returned Material Tag" gives instructions to the technician/supply attendant to complete and attach a tag to Equipment Type/ List Number. Once again there's no mention of Teletype Equipment/USOC Option(s).

-The Tag and Practice contain information that's obsolete.

-Network Field Forces were instructed and trained (per Issue 2, SECTION 590-009-100 of Bell System Practice) one way, whereas the CIMS/LV personnel were instructed and trained (per the CIMS/LV BISPs) another way.

Solution: -Revise the Bell System Practice on "Returned Material Tag", Section 590-009-100, Issue 2, January 1983.

-Revise "Returned Material Tag", SD-44-507.1 (7-82).

-Train the Network Field Forces and the Materials Management personnel on the proper usage of the revised "Returned Material Tag". Enforce both the Network Field Forces and the Materials Management work groups to adhere to the revised Practice.

Problem #5: CIMS/LV Area Administrators are not informed whenever non-stocked data and teletype equipment is received at the Telephone Company Storerooms (TCS).

Cause: The Corporate Procurement Organization is a new operating area for Southwestern Bell. As with anything new, problem areas exist and have to be ironed out. This is the situation with the CIMS/LV Area Administrators not being informed whenever non-stocked data and teletype equipment is received at the TCS.

Negative Effects: Non-Stocked data and teletype equipment are omitted from the CIMS/LV data base whenever the field fails to forward a receipted copy of the non-stocked items to the CIMS/LV Area Administrator.

-Non-Stocked data and teletype equipment omitted from the CIMS/LV data base are lost in the Corporate Warehouse inventory.

-Defeats the purpose of the CIMS/LV tracking system.

-Leaves an open door to stockpile equipment..

Solution: Develop Methods and Procedures instructing the field to forward receipted copies of all non-stocked data and teletype equipment to the CIMS/LV Area Administrator.

Problem #6: Southwestern Bell CIMS/LV USOC to Equipment Tables and AT&T-IS CIMS/LV System Tables need to be revised.

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Cause: Western Electric will occasionally ship an updated version of a particular price of equipment. Usually the updated version is a new product which has not been added to the System Tables. When this type of shipping takes place, an error message is generated by the RMDS-CIMS/LV interface to alert the user of the situation.

Example:

```
47A1          IS INVALID EQUIP FOR S.W. BELL
NO ITEMS IN THE DATABASE WERE REQUESTED
52983158      SHIP NOT ENTERED

HOLDER COPY H981A   IS INVALID EQUIP FOR S.W. BELL
NO ITEMS IN THE DATABASE WERE REQUESTED
52983178      SHIP NOT ENTERED
```

This message informs the user that the specified equipment was reported shipped by Western Electric and is valid for tracking by CIMS/LV, but Southwestern Bell has chosen not to include it in the CIMS/LV data base. This message helps to identify equipment that is active in the inventory loop, and probably should be considered for tracking.

```
52921789   BACKORDER INFORMATION
THE FOLLOWING ITEMS WERE BACKORDERED
EQUIPMENT                    QTY
JY3!                           1
202SRL1C                       1

JY3!   DOES NO EXIST IN THE SYSTEM DATABASE
202SRL1C  NEW SUBSTITUTED FOR REPC.
52921789  BACKORDER ENTERED
```

Occasionally, the Western Electric equipment nomenclature does not match with Southwestern Bell's CIMS/LV equipment description or the specified equipment shipped by Western Electric does not exist in teh CIMS/LV data base. If the Southwestern Bell Company Administrator determines that the information as reported by Western Electric is correct, the company's AT&T-IS CIMS/LV Support Personnel must be contacted in order to add the equipment to the System Tables.

Negative Effects: Error messages generated due to invalid equipment causes the following problems:

-Creates extra time and work effort for the CIMS/LV clerical staff.

-Unnecessary time and effort is generated by researching the errors.

-Research causes a loss in the quantity of work generated on a daily basis by the CIMS/LV clerical staff.

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Solution: Coordination between the following work groups would suffice in keeping the Southwestern Bell CIMS/LV USOC to Equipment Tables and AT&T-IS CIMS/LV Systems Tables up-to-date:

- -CIMS/LV Company Administrator
- -CIMS/LV Area Administrators
- -OCS Engineering
- -AT&T-IS Support Personnel
- -AT&T-IS Data Systems

Cutover Schedule
For Moving CIMS/LV Onto an In-House System

Activity or Event	Responsible Group						Depends Upon Activity No.	Start Date		Completion Date	
	SWBT M.M.	SWBT I.S.	SWBT SRTS	SWBT Data Ctr.	ATT-IS	AT&T Techn. Inc.		Sched.	Actual	Sched.	Actual
1. Complete SRTS Questionnaire.	X							-	-	-	1/84
2. Send Questionnaire to SRTS Group.	X						1	-	-	-	1/84
3. Provide sufficient Telecommunication, CPU and Disk Capacity.			X				2	1984		Ongoing	
4. Request Info. Sys. Project Leader	X							-	-	-	12/83
5. Designate Project Leader		X					4	-	-	-	12/83
6. Inform SRTS Group of Proj. Leader's name.	X						5	-	-	-	2/84
7. Complete SRTS User Number Request Forms.	X							2/84	2/84	2/84	
8. Send User Number Forms to SRTS.	X						7	-	-	2/84	
9. Establish SRTS User Numbers.			X				8	2/84		3/84	
10. Inform Users of Tentative Plans.	X							-	-	-	2/84
11. Request load modules from ATT-IS	X	X						-	-	-	12/83 2/84
12. Transmit load modules to SRTS.					X		11	-	-	1984	
13. Load and verify.		X					9, 12	-	-	1984	
14. Arrange for dual updating from T/S RMDS.		X				X		1984		1984	
15. Set dates for parallel test.	X	X	X	X		X		-	-	-	2/84
16. Select User for parallel test.	X							2/84		3/84	
17. Inform Users of New Tel. No., details.	X							-	-	1984	
18. Instruct parallel test group.	X						15, 16	-	-	1984	
19. Instruct all Users to test Logon during parallel.	X						15	-	-	1984	
20. Request Data Base for test.		X						-	-	1984	

EXHIBIT I
Page 1

Activity or Event	Responsible Group						Depends Upon Activity No.	Start Date		Completion Date	
	SWBT M.M.	SWBT I.S.	SWBT SRTS	SWBT Data Ctr.	ATT-IS	AT&T Techn. Inc.		Sched.	Actual	Sched.	Actual
21. Transmit Data Base for test.					X		20	-	-	1984	
22. Verify Data Base.	X	X					21	-	-	1984	
23. Run parallel test.	X					X	3,9,13,18,22	1984		1984	
24. Evaluate parallel test.	X	X					23, 35	1984		1984	
25. Set Tentative Date for cutover.	X	X	X	X			13, 14	-	-	-	2/84
26. Set Firm Date for cutover.	X	X	X	X			24	-	-	1984	
27. Request Data Base.		X						-	-	1984	
28. Transmit Data Base to SRTS.					X		27	-	-	1984	
29. Load Data Base on SRTS.		X					28	-	-	1984	
30. Verify Data Base.	X	X					29	-	-	1984	
31. Establish ongoing procedures.	X	X	X	X	X	X	13,22,23	3/84		1984	
32. Publish ongoing procedures	X						31	-	-	1984	
33. Cutover.							All Above	-	-	1984	
34.											
35. Establish parallel test evaluation procedures.	X	X						2/84		3/84	
36. Discontinue T/S RMDS updating to Piscataway.		X					33	-	-	1984	

PHASE III: SYSTEMS EVALUATION AND JUSTIFICATION

INTRODUCTION

Preparing a Final General Systems Design Report is the next process the analyst must go through. This report is the basic document that management uses to make a decision as the what proposed general systems design should be implemented.

GENERAL SYSTEMS DESIGN REQUIREMENTS

Not all systems designs call for computer equipment selection and acquisition. Assume, however, that it has been concluded at this point that some kind of a computer configuration is necessary to meet the general systems requirements. These fall into the categories of processing requirements and tailoring requirements.

Processing Requirements. The nature of the organization can dictate, to a great degree, the kind of data processing used. These requirements are: 1) volume requirements, 2) timing requirements, 3) complexity requirements, and 4) computational requirements.

Volume pertains to the number of data units processed during some time period. Timing refers to the degree of quickness with which the system

must react to users' requests or to changing events. Complexity relates to the degree of intricate, interrelated, and complicated details that must be handled by the system. Computational requirements simply mean that the system must handle complex computations, such as are dictated by the application of a variety of models (e.g., linear programming).

Tailoring Requirements. These requirements are instituted to enhance the system's information-producing capabilities for the tactical and strategic decision levels in the management system. Such requirements that exist at these levels are met by the following methods: 1) filtering, 2) monitoring, 3) interrogative, 4) key variable, 5) modeling, and 6) strategic decision center. The implementation of these methods will normally require sophisticated equipment and advanced data base management systems.

Not only do the requirements imposed upon the system by these methods dictate the type of equipment selected, but they also restrain the degree of flexibility with which the analyst can work.

APPROACHES TO OBTAINING EQUIPMENT PROPOSALS

The various requirements of the systems design help to determine the computer configuration needed

(e.g., processor, peripherals, and data communication devices). Although there are other ways to obtain computer processing such as service bureaus and remote computing networks, it is assumed here that the final computer configuration will be acquired (rented, leased, or purchased) from one of the computer vendors.

The analyst may choose from three basic approaches when obtaining equipment proposals. These are:

1. Proposal for a Specific Configuration. With this method, the analyst specifies a particular computer configuration and requests that vendors submit proposals based on these particular specifications. One advantage of this approach is that it tends to reduce the complexity of evaluating different vendors' proposals. Secondly, it reduces the time period required by the vendor to prepare a proposal. The primary disadvantage is that this approach generally rules out a vendor offering a new or different equipment configuration not known to the analyst.
2. Proposal for Performance Objectives. In this approach the analyst translates the systems requirements into performance objectives and

submits them to several vendors, requesting proposals for the type of equipment that they feel can best satisfy these objectives. The advantages to this approach are that it minimizes the effect of the analyst's lack of equipment knowledge, permits the most knowledgeable persons (i.e., the vendor personnel) to configure the equipment, and provides further alternatives for performing an activity or satisfying an objective. The disadvantages of this approach are that the vendor usually requires a long period of time to prepare a proposal, the evaluation process is complicated, and the analyst's organization might not possess the expertise to implement a given vendor proposal.

3. Proposal from One Vendor. A third approach which has widespread popularity, especially in smaller organizations, is to pick one vendor and allow this vendor to propose one or two alternatives for meeting the systems requirements, based on the vendor's available technology. The advantage to this approach is that an organization spends very little time and money choosing and evaluating equipment, and thus is able to concentrate its resources on other

developmental activities. The obvious disadvantage is that a particular equipment manufacturer will seldom (never?) recommend utilizing another vendor's equipment, in whole or part.

THE EVALUATION PROCESS

For the evaluation analysis, it is assumed that bids, based on a specific configuration, have been submitted to several vendors. The general process one goes through to evaluate these proposals follows.

At the first level evaluation, the analyst simply determines which vendors have met the mandatory requirements.

Besides reading literature published by vendors and independent services, and querying users about vendors' equipment, there are two primary methods of testing equipment performance. These are the benchmark methods and the simulation method:

1. Benchmark Method. Test problems are prepared and run on the same equipment configuration proposed by the vendor. Overall, the benchmark programs test: 1) anticipated workload, 2) compilers, 3) operating system, and 4) application and utility packages. To apply

benchmark programs, the systems analyst can obtain an agreement with the vendor to run the programs at the vendor's location, run the programs on some other user's computer system or hire a consulting firm to perform the benchmark testing. The elasped operating time required to run the test problems is the main determinant. If the test problems are representative of the future processing workload, then required times for future operations can be extrapolated. This method is usually effective for evaluating operating time requirements for typical batch processing configurations but is not particularly applicable to analyzing large total systems in an online environment.

2. Simulation Method. This method utilizes mathematical models which accept a number of measurements such as sizes and structures of files, frequency of access to files, transaction volume, etc. These models are then run on computers to predict time considerations such as turnaround time clock time, response time, and so forth. In addition, simulation models help to predict systems capacity (used and unused), and to define optimal equipment

configurations.

The systems analyst must be aware of a number of other standards and constraints when selecting equipment. These include:

a) Modularity. The concept of modularity allows the addition of components to the configuration, thereby allowing it to change and grow to meet changing systems need.

b) Compatibility. In some instances the installation of one computer system to replace an old system means major program rewrites. The term "compatibility" has three facets:

- Flexibility-computers are designed for a variety of purposes, allowing them to be used for business data processing applications, communications and time-sharing; and for scientific applications; sometimes all with equal facility.
- The design concept of a family of computers that allows a small "child" (e.g., IBM 370 Model 138) to grow into an "adult" (e.g., IBM 370 Model 168) without necessitating major software changes.
- The concept of machine-independent

languages, such as COBOL, that permit programs written in this language to be run on a variety of computers.

c) Reliability. All computer configurations must be reliable, especially integrated configurations. High reliability is based on the type of production control and testing methods used by the vendor. The measure of reliability used by engineers is MTBF (Mean Time Between Failure). To minimize the probability of failure, the concept of redundancy is used. Redundancy utilizes two paralled components to decrease the probability of failure.

d) Maintainability. MTTR (Mean Time To Repair) is the basic measure of maintainability. The MTTR consists of the time required to accomplish the following: detect the nature of the failure; isolate the malfunctioning element; remove the malfunctioning element; obtain a replacement for it; replace it; verify its operability; initialize the replacement, proceed to an operable state. The accomplishment of these actions is influenced by the physical construction, the level at which replacements can be made,

the training of the maintenance technicians, the ability to detect and isolate malfunctions, the extent and quality of diagnostic tools, the built-in test and diagnostic facilities of the system, and the repair facilities of the complex.[3]

e) General Vendor Support. The support of the vendor is of primary importance when making an equipment selection decision. In the long run the equipment is no better than the general support from the vendor. This support includes such things as: 1) availability of training facilities; 2) installation support; 3) system development, conversion, and testing assistance; 4) experience level and competency of vendor's personnel; 5) duration of time any support is available after installation of equipment; and, 6) available of specialized software systems such as generalized data base management systems.

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[3]Dr. Boris Beizer, "The Viability of Computer Complexes-Reliability and Maintainability, Modern Data, December, 1969, pp. 60-63. Used with permission.

ACQUISITION CONSIDERATIONS

There are financial and legal considerations involved in acquiring computer equipment of which the analyst must be aware.[4] The four alternative financial means of acquiring computer equipment are: 1) rent from vendor, 2) purchase from vendor, 3) base from third party, or 4) a combination. Legal considerations involve the negotiation of a strong, enforceable, low-risk contract.

COST/EFFECTIVENESS ANALYSIS

Justification of a proposed configuration, or anything else requiring a capital investment, should always be stated in terms of cost/effectiveness. This analyst weighs the effectiveness derived from the direct and indirect benefits of a proposed system against resource constraints which, in this analysis, equate to costs. This analysis determines if the proposed system produces benefits which outweigh costs. Normally, this analysis is performed on a number of desirable alternative systems and by comparison indicates which one is the best.

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[4]See, for example, Computer Decisions, March, 1974.

The effectiveness of any proposed system is measured in terms of two kinds of benefits: 1) direct benefits are cost savings resulting from the elimination of an operation, or from the increased efficiency of some process (sometimes called tanagible benefits); and 2) indirect benefits, sometimes called intangible benefits and cannot be easily traced to the system. However, an attempt should be made to express, in quantitative terms, those which can be identified. These benefits occur over the useful life of the system, which runs from the point of start-up to the point of operational obsolescence (the time at which the system is due for an overhaul).

Management is most interested normally in direct costs (i.e., those add-on costs that relate directly to the proposal).

The general systems design requirements will dictate what kind of system is finally implemented.

The following is an illustration of the General Systems Design Report:

CENTRALIZED INVENTORY MANAGEMENT SYSTEM/LOW VOLUME (CIMS/LV)

Phase III: Systems Evaluation and Justification

Employee Impact. Additional training will be

required of all Materials Management and Network Field Forces. Both work groups will have to be trained on the proper use of the revised "Returned Material Tag" and the Southwestern Bell Telephone Company "Returned Material Tag Practice." The tag must be filled out correctly and the practice will provide such instructions. Training sessions will be conducted by the AT&T-Information Systems personnel, if major adjustments are made in the overall CIMS/LV Operation. Any other training that is required for the CIMS/LV users will be conducted by the CIMS/LV Company Administrator.

Cost/Effectiveness Analysis. Bringing the CIMS/LV System In-House at this time does not seem to be the most economically feasible method for the following reasons:

- Right before divestiture, the AT&T-Information Systems Support Group changed some of the software when they moved the CIMS/LV System from System "N" to System "A". As a result, Southwestern Bell currently does not have a T-tran link on System "A" in order that the CIMS/LV Operation might be brought In-House. However, the Data Systems Support Group within Southwestern Bell are developing a T-tran link to support the CIMS/LV System and hope to have it completed by the end of 1984.

- Contract (annual) dollars still have not been negotiated and established between AT&T-Information Systems and Southwestern Bell regarding the CIMS/LV Project, System "A". Monthly costs are being calculated based upon the 1983 System "N" figures.

PHASE IV: DETAIL SYSTEMS DESIGN

INTRODUCTION

To transform a general or conceptual design into a unified system of people and machines that collects and processes data and produces information, the systems analyst must perform some additional activities. Many of these activities are related to the development of the data base. The control points necessary to ensure reliable processing of data must be identified and explained, and the important aspects of security must be considered during the Detailed Systems Design.

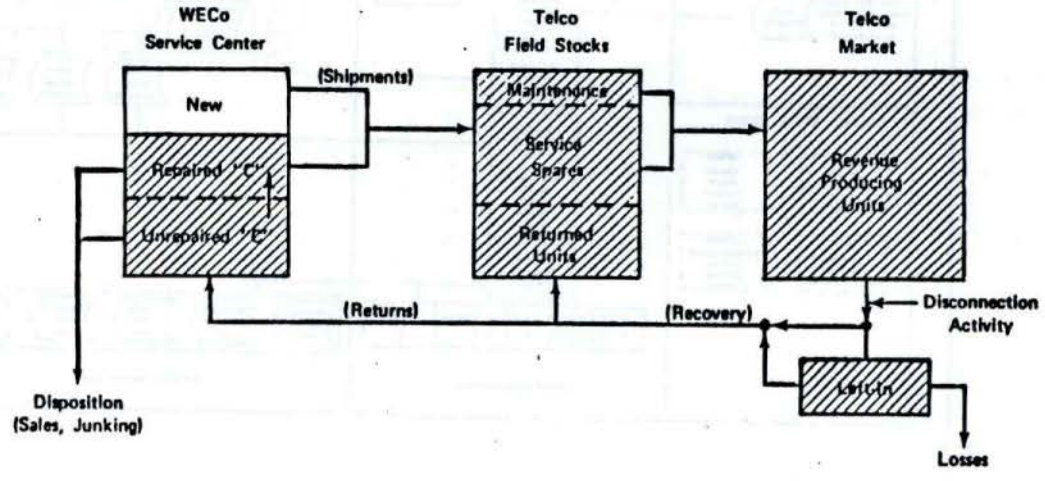
CONTROL POINTS

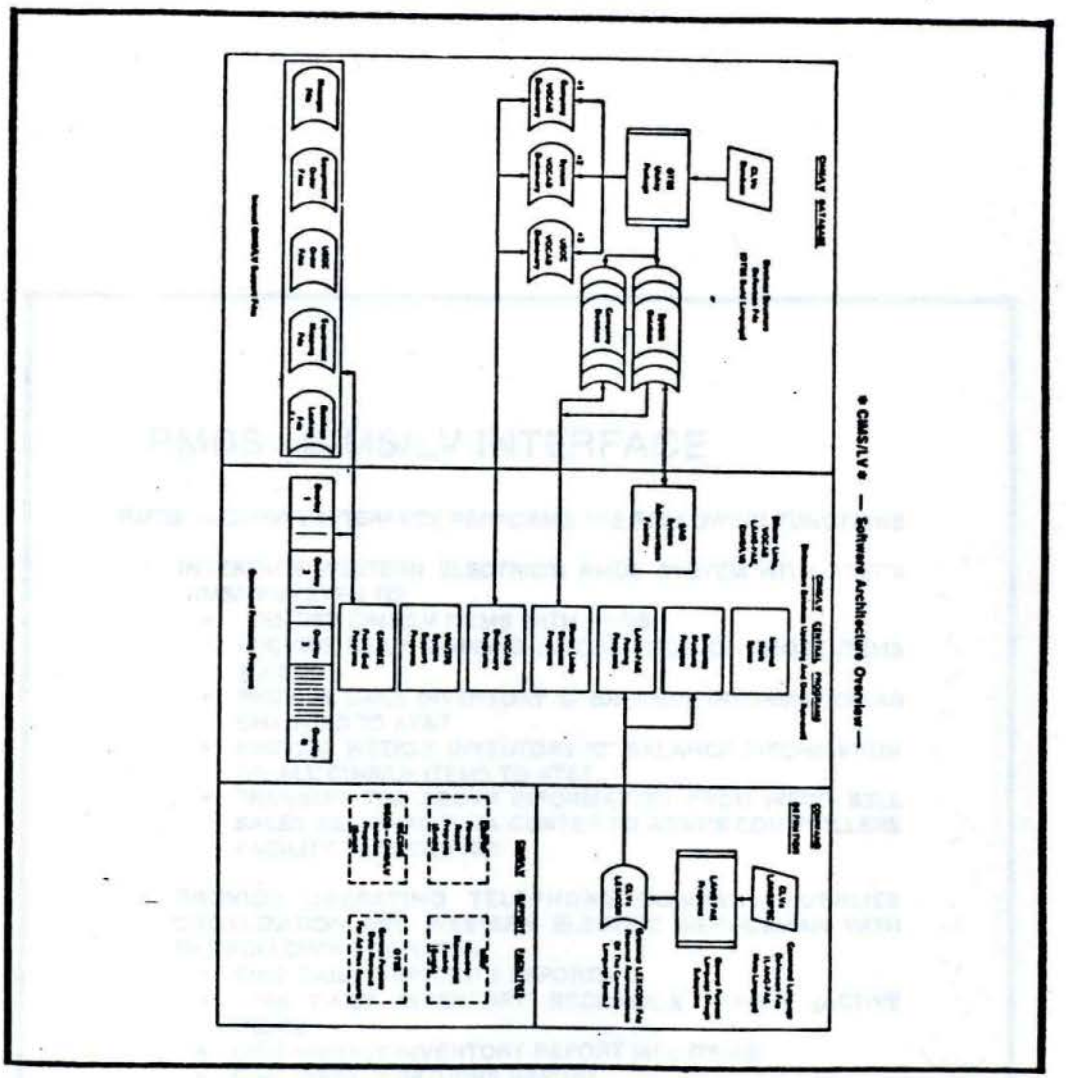
An important part of the overall design of an information system is the establishment of effective controls. During the specific design phase, the systems analyst must identify and implement a series of processing controls to insure the integrity and reliability of the information system. These processing controls can be categorized as follows: 1) input controls, 2) programming controls, 3) data base controls, 4) output controls, and 5) hardware controls. (See Exhibit J, Appendix C.)

EXHIBIT J
Page 1

Centralized Inventory Management System
(CIMS)

TELCO INVENTORY LOOP FOR STATION PRODUCTS

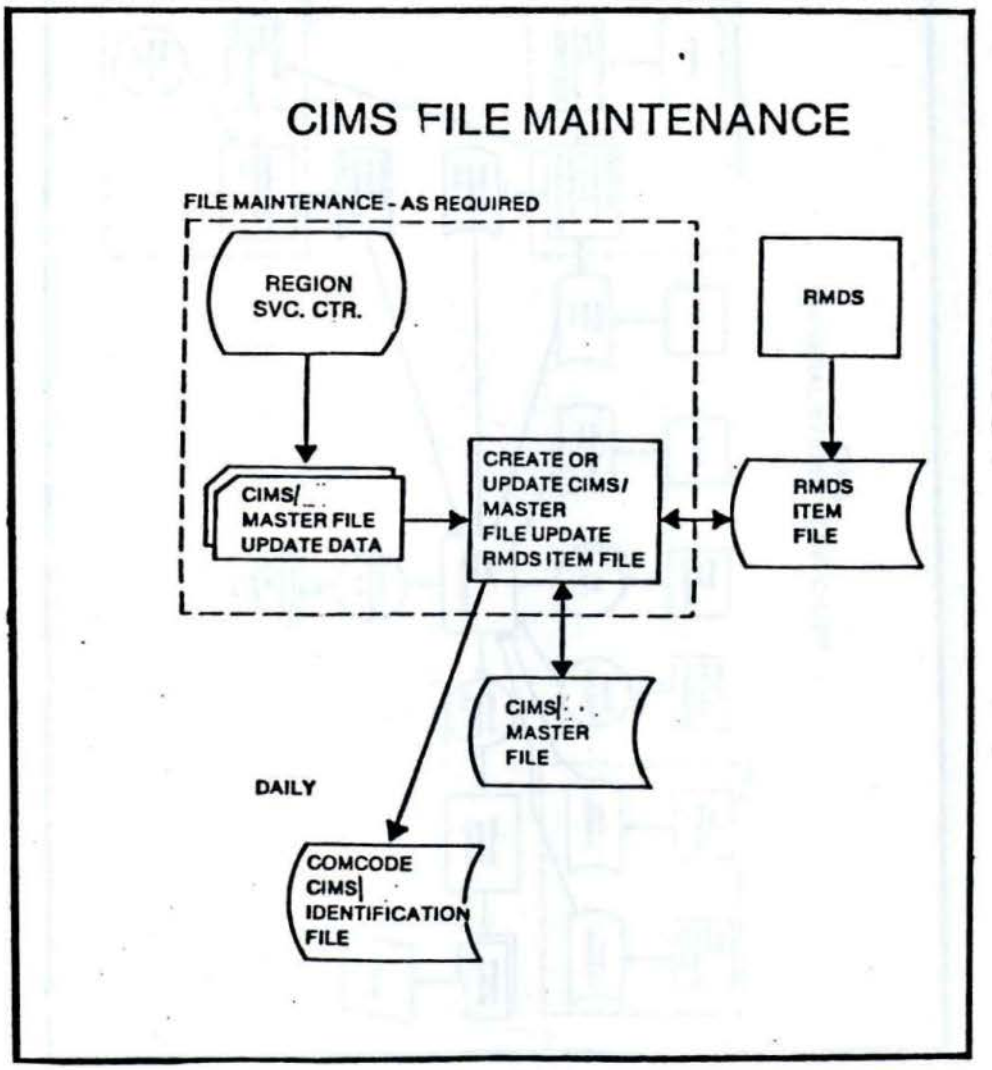


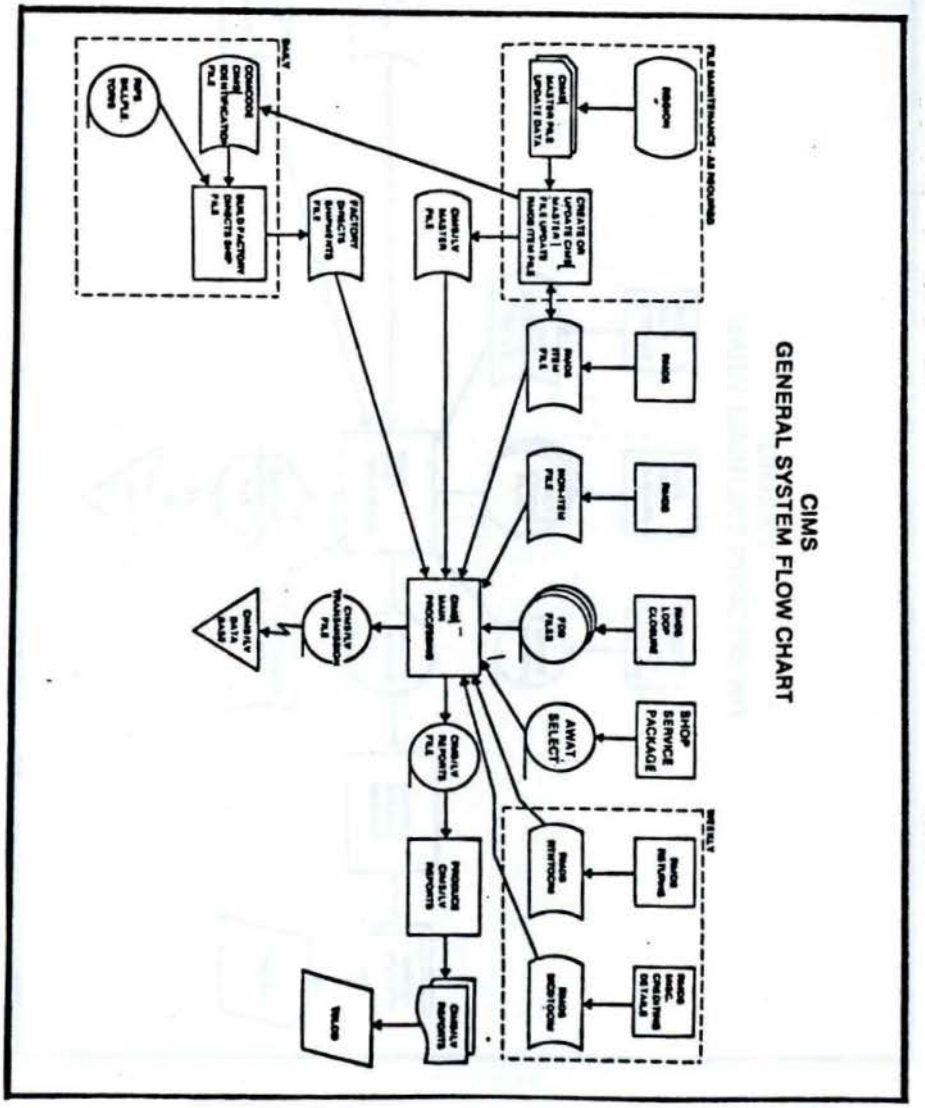

• CIMS/LV • — Software Architecture Overview —

RMDS - CIMS/LV INTERFACE

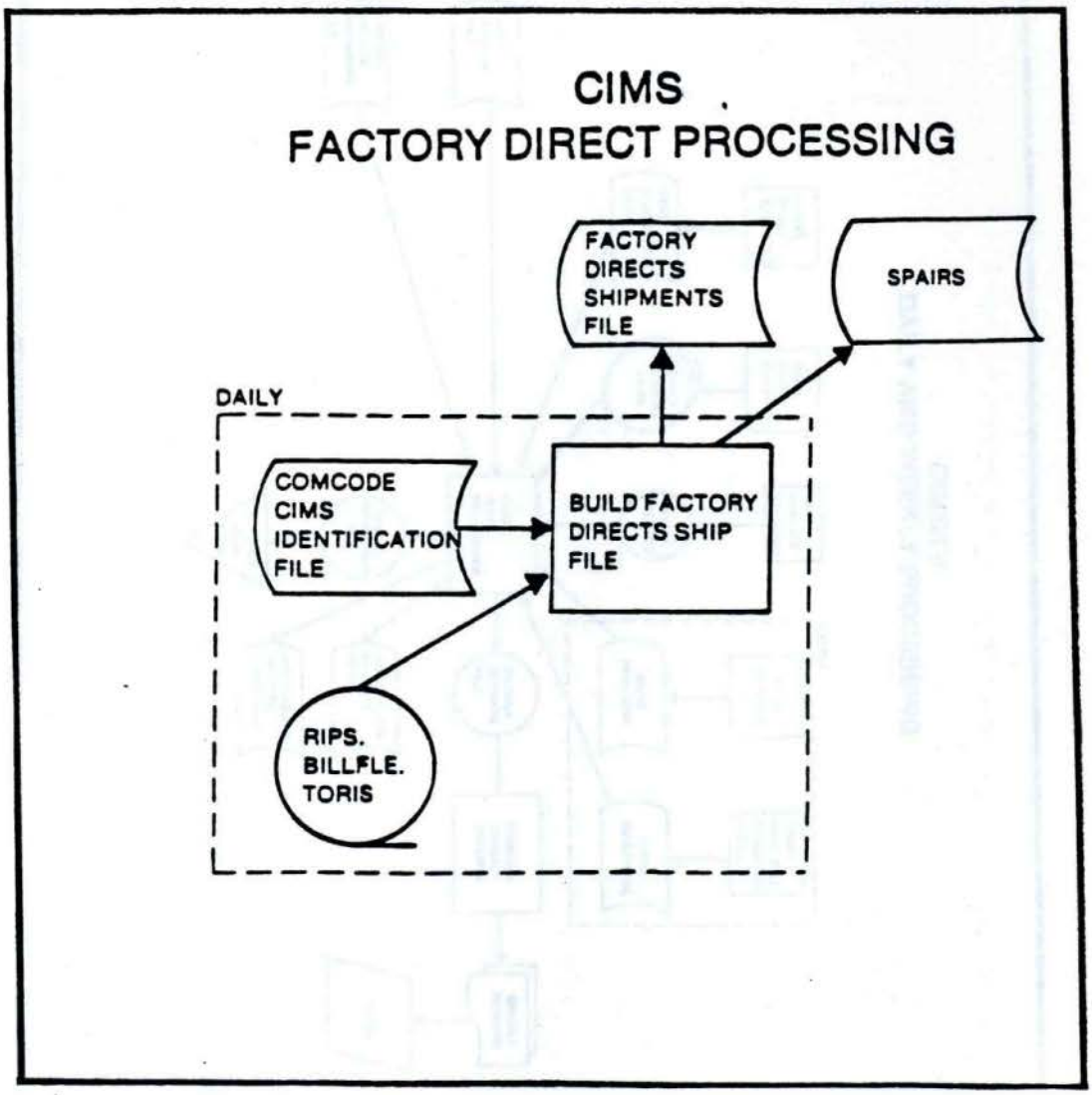
RMDS – CIMS/LV INTERFACE PERFORMS THE FOLLOWING FUNCTIONS

- INTERFACE WESTERN ELECTRIC'S RMDS SYSTEM WITH AT&T'S CIMS/LV SYSTEM TO:
  - IDENTIFY CIMS/LV ITEMS WITH RMDS
  - PROVIDE DAILY SHIPPING INFORMATION ON THOSE ITEMS TO AT&T
  - PROVIDE DAILY INVENTORY 'C' BALANCE INFORMATION AS CHANGED TO AT&T
  - PROVIDE WEEKLY INVENTORY 'C' BALANCE INFORMATION ON ALL CIMS/LV ITEMS TO AT&T
  - TRANSMIT THE ABOVE INFORMATION FROM WECO BELL SALES REGIONAL DATA CENTER TO AT&T'S CONTROLLERS FACILITY DATA CENTER
- PROVIDE OPERATING TELEPHONE COMPANY SUPPLIES ORGANIZATION AND WESTERN ELECTRIC SERVICEMAN WITH THE FOLLOWING REPORTS:
  - CIMS DAILY SHIPMENTS REPORTS
  - CIMS DAILY INVENTORY RECONCILE REPORT (ACTIVE ITEMS)
  - CIMS WEEKLY INVENTORY REPORT (ALL ITEMS)
  - CIMS WEEKLY RETURNS REPORT

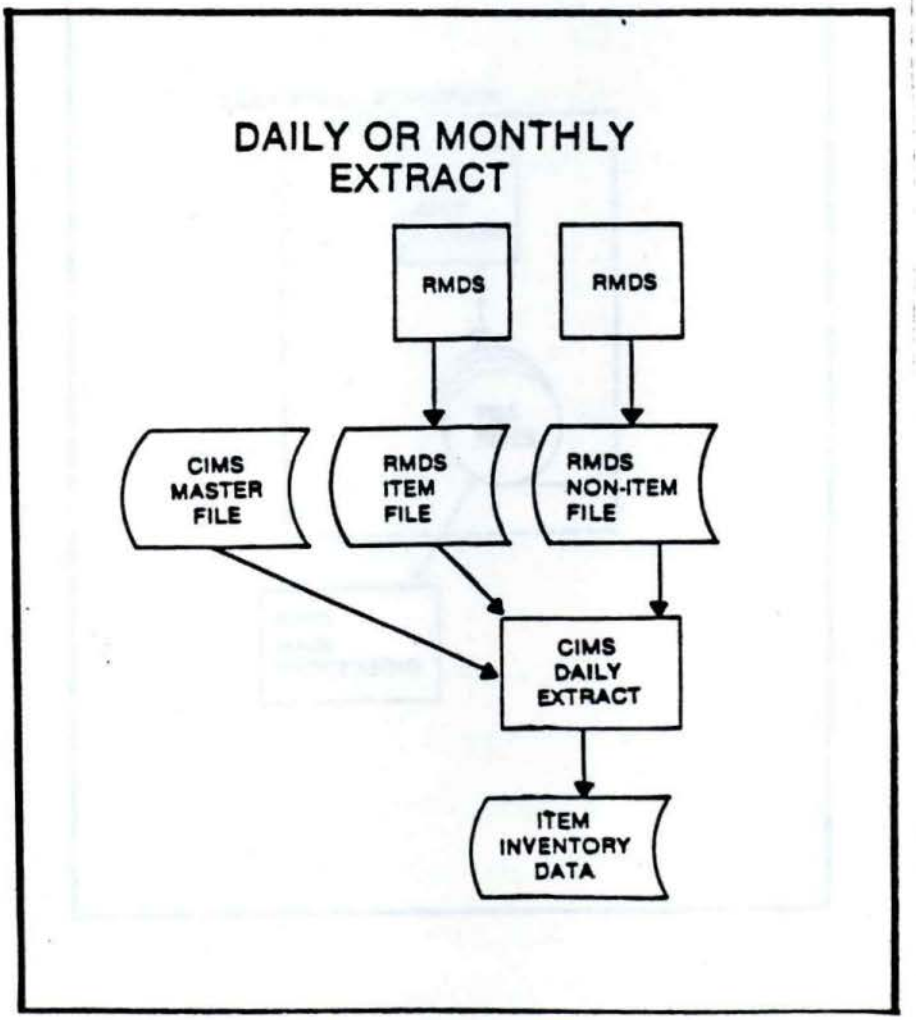

CIMS FILE MAINTENANCE
FILE MAINTENANCE - AS REQUIRED
REGION SVC. CTR.
RMDS
CIMS/ MASTER FILE UPDATE DATA
CREATE OR UPDATE CIMS/ MASTER FILE UPDATE RMDS ITEM FILE
RMDS ITEM FILE
CIMS/ MASTER FILE
DAILY
COMCODE CIMS/ IDENTIFICATION FILE

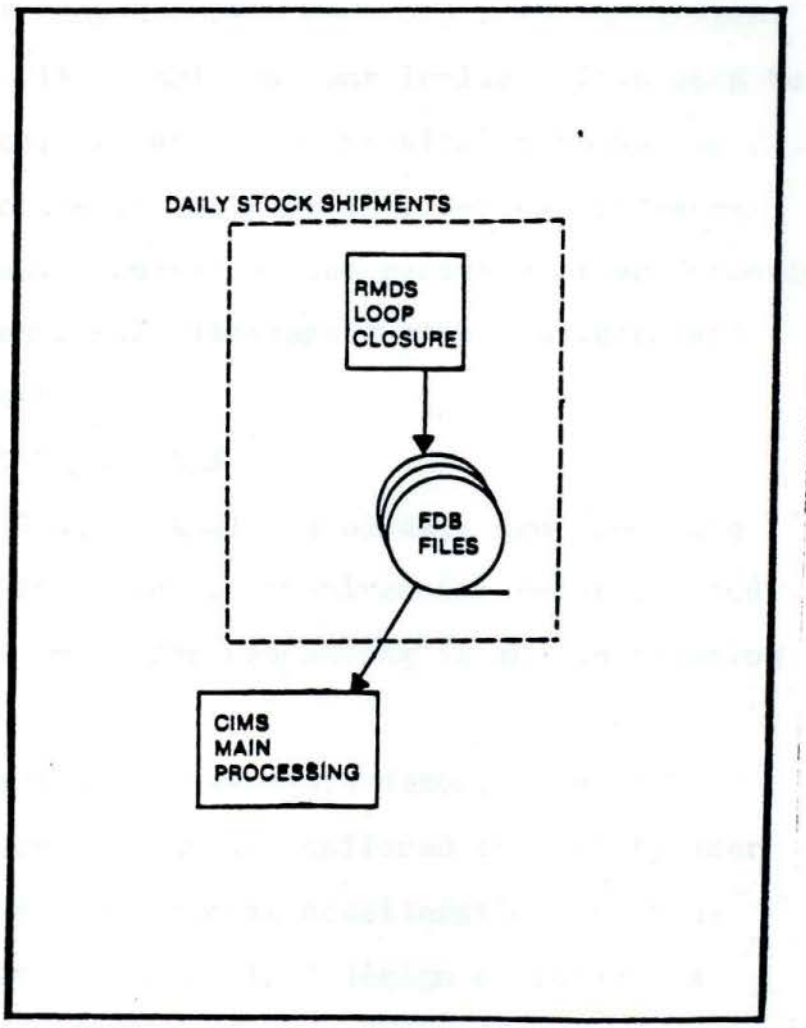

CIMS
GENERAL SYSTEM FLOW CHART

CIMS/LV
DAILY MAINLINE PROCESSING
CIMS DAILY EXTRACT
ITEM\ INVENTORY\ DATA
RMDS LOOP CLOSURE
DAILY STOCK FILES
BHOP SERVICE PACKAGE
AWAITB SELECTS
CIMS MASTER FILE
FACTORY DIRECTS SHIPMENTS FILE
CIMS MAIN PROCESSING
CIMS/LV TRANSMISSION FILE
CIMS/LV DATA BASE
CIMS/LV REPORTS FILE
ACCUMULATE HV SHPG. DATA
PRODUCE CIMS/LV REPORTS
CIMS/LV REPORTS
TELCO


CIMS
FACTORY DIRECT PROCESSING
FACTORY DIRECTS SHIPMENTS FILE
SPAIRS
DAILY
COMCODE CIMS IDENTIFICATION FILE
BUILD FACTORY DIRECTS SHIP FILE
RIPS. BILLFLE. TORIS

CIMS/LV
DAILY AND WEEKLY PROCESSING
CIMS DAILY EXTRACT
ITEM INVENTORY DATA
RMDS LOOP CLOSURE
DAILY STOCK FILES
SHOP SERVICE PACKAGE
AWAT SELECTS
FACTORY DIRECTS SHIPMENTS FILE
CIMS MASTER FILE
CIMS MAIN PROCESSING
CIMS/LV TRANSMISSION FILE
CIMS/LV DATA BASE
WEEKLY
RMDS RTNTOCIM
RMDS RETURNS
RMDS MASTOCIM
RMDS MISC. BILL CREDITING DETAILS
ACCUMULATE HV RTNS & MCD DATA
ACCUMULATE HV SHPG DATA
CIMS/LV REPORTS FILE
PRODUCE CIMS/LV REPORTS
CIMS/LV REPORTS
TELCO


DAILY OR MONTHLY
EXTRACT
RMDS
RMDS
CIMS
MASTER
FILE
RMDS
ITEM
FILE
RMDS
NON-ITEM
FILE
CIMS
DAILY
EXTRACT
ITEM
INVENTORY
DATA


DAILY STOCK SHIPMENTS
RMDS
LOOP
CLOSURE
FDB
FILES
CIMS
MAIN
PROCESSING

SECURITY CONTROLS

Security, another form of control, must also be considered during the design of an information system. In large information systems there might be a separate group responsible for establishing security. More often, the systems analyst must implement many security controls into the system. Some security considerations include (1) access to data files, (2) access to physical components, (3) transmission intervention, and (4) software disruption. Procedures for recovery after intentional or unintentional disasters must be designed and implemented.

FORMS AND PROCEDURES

The Systems Analysis of data provided some insights into the alternatives for recording and collecting data for processing in the information systems.

A variety of ways were described on how information outputs are tailored to satisfy user needs. Many additional considerations must be entered into the detailed design of forms. A description is provided of the activities involved in preparation of formal, written documentation that serves to communicate the ideas of the systems analyst to the personnel operating and programming

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the system.

FORMS/REPORTS DESIGN

An important activity during detail design is the design of all the forms and reports required in the information system. Forms can be categorized as input, output (reports), or turnaround documents. To design effective and economical forms, the analyst must perform an analysis of the form, identifying its purpose, distribution, and physical attributes.

HUMAN PROCEDURES

Clerical procedures are formal descriptions of the activities to be performed by the human elements of the system.

PROGRAM SPECIFICATIONS AND TECHNIQUES

Program specifications are formal descriptions of the activities to be performed by the computer.

The following is an illustration of the Final Detail Systems Design Report.

CENTRALIZED INVENTORY MANAGEMENT SYSTEM/LOW VOLUME (CIMS/LV)

Phase IV: Detail Systems Design

Program Specifications. Describing the activities to be performed on a computer in a system is referred to as preparing program specifications,

The formal preparation of program specifications by the analyst provides three distinct benefits: (1) an opportunity for the analyst to rethink the systems design logic at a low level of detail; (2) a vehicle for communicating, to one or more programmers, that which is required of the programmer; and (3) a permanent record which describes or documents the activities performed by each program in the system. The importance of having complete and accurate program specifications increases as systems become large, complex and integrated. (See Exhibit K.)

CIMS/LV PROGRAM SPECIFICATIONS

This order is for computer service and support of the Centralized Inventory Management System/Low Volume (CIMS/LV) as outlined in Sections I through IV of this order.

I. REMOTE COMPUTER SERVICES CONTRACT

This order is an agreement between AT&T Information Systems (AT&T-IS) and Southwestern Bell Telephone Company (SWBT). The provisions of that agreement are made part of this order by this reference.

II. EFFECTIVE DATE OF CONTRACT

The computer service and support for CIMS/LV as set forth in Section III through IV of this order shall become effective as of the date the agreement is approved by both AT&T Information Systems and Southwestern Bell Telephone Company. This agreement will cover the period from January 1, 1984 until terminated.

III. FUNCTIONAL ACCOUNTING BILLING INFORMATION

AT&T-IS shall provide Southwestern Bell with a monthly invoice for computing services provided during the preceding month and shall be payable within thirty (30) days of the date of the invoice.

IV. SPECIFICATIONS FOR SERVICES TO BE PROVIDED BY AT&T INFORMATION SYSTEMS

AT&T-IS shall provide Southwestern Bell with computing services and support on a daily basis; 6:00 A.M. - 11:00 P.M. C.S.T., Monday through Friday.

A. CIMS/LV User Support

AT&T-IS shall provide Southwestern Bell with a knowledgeable and experienced support personnel.

AT&T-IS support personnel shall coordinate the requests of the Southwestern Bell Company Administrator to improve or expand CIMS/LV capabilities.

B. User Manuals

The Bell Information System Practices (BISPs) are the user manuals containing all the necessary information needed to operate the CIMS/LV system. Any modifications made to the CIMS/LV operation by AT&T-IS shall be explained to Southwestern Bell through enhancement bulletins to be used as updates to the BISPs.

The Centralized Inventory Management System/Low Volume shall consists of the following procedures; 1.) WECO-CIMS/LV, 2.) Database Management, 3.) Off-The-Shelf-System and 4.) Monthly Maintenance as set forth in the listed documentation:

CIMS/LV Documents

BISP 790-205-100 "CIMS/LV System Overview" 5/82

BISP 790-205-160 "CIMS/LV Equipment Tracking" 2/82

BISP 790-205-230 "CIMS/LV WECO User Guide" 3/82

BISP 790-205-110 "CIMS/LV Command Language Flipchart"

BISP 790-205-130 "CIMS/LV Reports Package" 6/81

BISP 790-205-170 "CIMS/LV Network Administration User Guide" 3/82

BISP 790-205-190 "CIMS/LV Inventory, Adjust, and Transfer Commands" 3/82

BISP 790-205-210 "CIMS/LV Location-User Definition User Guide" 3/82

BISP 790-205-220 " CIMS/LV USOC-Equipment Definition User Guide" 3/82

"CIMS/LV OTSS Reports Manual"

BISP 790-205-240 "CIMS/LV Monthly Maintenance" 3/82

BISP 790-205-140 "CIMS/LV Request Level User Guide" 2/82

BISP 790-205-150 "CIMS/LV Service Order Flow User Guide" 2/82

BISP 790-205-180 "CIMS/LV Repair Performance Monitoring Option User Guide" 3/82

BISP 790-205-120 "CIMS/LV On-Line Message Directory"

BISP 790-205-200 "CIMS/LV Periodic Database Management"

BISP 790-205-250 "CIMS/LV Inventories"

C. WECO-CIMS/LV Interface

Daily, Western Electric shall send a tape containing Regional Materials Distribution System-Centralized Inventory Management System/Low Volume (RMDS-CIMS/LV) data to AT&T-IS. The information shall be processed and then via on-line inquiry Southwestern Bell shall request the information for updating the CIMS/LV database.

D. Database Management

A listing of all valid equipment codes and USOCs capable of being tracked by CIMS/LV shall be centrally maintained by AT&T-IS. As new products are marketed and old products discontinued, AT&T-IS shall supply Southwestern Bell this information via the :

-CIMS/LV System USOC Listing
-CIMS/LV System Equipment Listing

Southwestern Bell has chosen to track a subset of all possible equipment. The equipment codes and USOCs for each equipments shall be defined in Southwestern Bell's database for tracking to occur.

Southwestern Bell can request two reports that list the current valid equipment codes and USOCs stored in the CIMS/LV database.

-Company Equipment to USOC Mapping (CEUM)
-Company USOC to Equipment Mapping (CUEQ)

These reprots can be requested at anytime, but are normally part of monthly maintenance.

It shall be the responsibility of Southwestern Bell to ensure that CIMS/LV database contains valid equipment codes and USOCs for the equipments chosen to be tracked by CIMS/LV.

During implementation the User Identifier Codes shall be assigned by AT&T-IS with Southwestern Bell's approval. The passwords also used during the log on sequence shall be assigned by AT&T-IS with Southwestern Bell's approval.

The user account code shall be assigned by Southwestern Bell and will be used in the log on sequence and also on the billing information that is generated monthly.

E. Equipment Grouping

Equipment Groups shall be determined and structured by AT&T-IS. Periodically, AT&T-IS personnel shall prepare a report called the Maintenance Recommendation Grouping Information Report. This provides a list of current maintenance groups and subgroups. Southwestern Bell shall update the grouping to reflect any changes made by AT&T-IS. Also Southwestern Bell may elect to modify equipment groups to meet company requirements.

Aside from the structuring of groups Southwestern Bell also shall have the flexibility to display and change group leader parameters (values). These values shall be initially supplied by AT&T-IS, but may be changed to meet the conditions of Southwestern Bell or new AT&T-IS recommendations.

AT&T-IS shall maintain the replacement category information, however, the remaining cost values may be changed by Southwestern Bell.

F. Reports

The following maintenance reports shall be generated automatically after the processing of Monthly Maintenance:

Purge Order Listing (PORL)
Use to Adjust (ADJT)
Use to Transfer (TRAN)
Company Equipment to USOC Mapping (CEUM)

Company USOC to Equipment Mapping (CUEQ)
Disconnect Awaiting Removal Report (DARR)
Return-In-Transit (RINT)

Off-The-Shelf-System (OTSS) reports shall allow Southwestern Bell access to certain reports at the user's terminal.

Southwestern Bell shall reserve the right to request the development of new OTSS reports. To fill this request Southwestern Bell shall contact the AT&T-IS CIMS/LV support personnel and discuss the needs of the company. Then, in writing, send a description of the OTSS request to the AT&T-IS CIMS/LV support personnel including the format and information Southwestern Bell would like to see on the report.

Southwestern Bell shall reserve the right to select reports.

G. Report Distribution Files

It is Southwestern Bell's responsibility to ensure that the distribution files are accurate and kept-up-to-date.

H. Monthly Maintenance Activities

Monthly Maintenance shall be processed by Southwestern Bell. This process shall occur in three sequentially distinct phases:

Phase I - Processing
Phase II - Report Generation
Phase III - Report Distribution

Once monthly maintenance processing is completed, reports are generated outside of the database.

Following monthly maintenance execution, Southwestern Bell shall ensure that the latest versions of reports have been generated and are available for printing.

Once Southwestern Bell is assured that the latest version of the reports have been generated, the report distribution function must be initiated. Reports are printed and mailed by AT&T-IS.

PHASE V: SYSTEMS IMPLEMENTATION

INTRODUCTION

To implement the new system successfully, there are a few activities that must be performed by the systems analyst that are not classified generally as design work, per se. These activities involve the training and educating of personnel, and the testing of the system. Moreover, because of the dynamic environment of an organization, there is a special consideration, termed systems conversion, required to achieve implementation of the new system. Finally, the efforts of the systems analyst do not end with the implementation of the system. An implementation follow-up is often vital to the eventual acceptance of the system.

TRAINING AND EDUCATING PERSONNEL

People are the key ingredient in any system. Providing adequate education and training, both initially and on a continuing basis, is absolutely essential if a system is to achieve its objective.

TESTING THE SYSTEM

Testing the system is the final activity before implementation. In reality, testing occurs at many levels within a system, with the highest

level being systems testing. There are many different approaches available for testing. These approaches reflect a trade-off between the cost of preparing a test and the reliability obtained from the testing activity. Testing is becoming a more and more important activity in the implementation of a new system.

SYSTEM CONVERSION

The implementation of many new systems involves a conversion process from an existing system. The conversion process can include one or more considerations: 1) an equipment conversion, 2) a data processing method conversion, or 3) a procedural conversion: (a) direct, (b) paralled, (3) modular, and (4) phase-in. The data base requires special considerations during the conversion process. Planning is an important aspect of conversion. Generally, a broad conversion plan is prepared before specific design and developmental activities begin. A specific conversion plan is prepared shortly before the actual implementation of the new system.

FOLLOW-UP TO IMPLEMENTATION

Once the system has been implemented, the systems analyst serves as a consultant. The analyst is available to assist operations and user personnel

in understanding the new system, and in the solving of any identified problems.[5]

The following is a detailed illustration of the Final Implementation Report:

CENTRALIZED INVENTORY MANAGEMENT
SYSTEM/LOW VOLUME (CIMS/LV)

Phase V: Systems Implementation

Identify the force requirements necessary to maintain the CIMS/LV Operation:

Project Manager
Staff Manager-Mechanized Systems
Mr. F. Wilton
790 North Broadway, Room 8790
St. Louis, Missouri 63137 (314) 447-1990

CIMS/LV Company Administrator
Customer Services Staff Supervisor-Mechanized Systems (CIMS/LV)
Ms. S. Jennings
250 Southwest Broadway, Room 100
St. Louis, Missouri 63107 (314) 389-6077

CIMS/LV Area Administrators
Ms. K. Keller
7461 West Albany
North Little Rock, Arkansas 72116 (501) 973-4778

Customer Services Staff Supervisor-Supplies
Mr. J. Vault
9085 Eastern
Topeka, Kansas 66606 (913) 777-6878

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[5]John G. Burch, Jr., Felix R. Strater, and Gary Grudnitski, Information Systems: Theory and Practice, Second Edition, 1979, John Wiley & Sons, Inc.

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Mr. M. Nichols
8977 Woods Mill Road
Ballwin, Missouri 63047 (314) 894-8568

Customer Services Staff Supervisor-Materials Management
Ms. K. Peterson
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Oklahoma City, Oklahoma 74104 (405) 288-7989

Assistant Staff Supervisor-Materials Management
Ms. V. Houston
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P.O. Box 84801
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CINS/LV Area Administrator Clerks
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Ms. G. Miller
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Ms. K. Mattox (512) 922-6371
Mr. J. Johnson (512) 322-6460
Mr. D. Todd (512) 727-6486
Ms. D. Harper (512) 228-6399
Ms. M. Nelson (512) 332-6417
Ms. S. Hardy (512) 882-6371
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Assistant Manager-Warehouse Operations
Mr. D. Casey
4800 North Mason
Katy, Texas 77447 (713) 512-1358

Assistant Manager-Warehouse Operations
Mr. J. Bond
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Project Management Representative
Staff Manager-Business Customer Equipment-Special Equipment Design
Mr. M. Edwards
4070 Pine, Room 932
St. Louis, Missouri 63001 (314) 484-3084

OCS Equipment Engineers
Manager-Business Customer Equipment Engineering
Mr. C. Boyd
9119 Broadway, 18th Floor
P.O. Box 80
San Antonio, Texas 78299 (512) 212-6000

Note: Responsible for the geographic locations of Dallas, Houston and San Antonio, Texas.

Manager-Business Customer Equipment Engineering
Ms. H. Seller
1408 North Broadway, Room 1900
Oklahoma City, Oklahoma 73102 (405) 565-5560

Note: Responsible for the geographic locations of Arkansas, Kansas, Missouri and Oklahoma.

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499 Jefferson Road, Room 200
Parsippany, New Jersey 07054 (201) 383-6348

Staff Manager
Mr. J. Thompson
104 Jefferson Road, Room 100
Parsippany, New Jersey 07054 (201) 621-6678

AT&T-Information Systems Maintenance Support Personnel
Member of Programming Staff-23
Mr. K. Metz
900 Attruim Drive, Room 667
Somerset, New Jersey 08873 (201) 921-6595

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Arkansas-Little Rock - Pine Bluff - Hot Springs	Mr. S. Hall 821 West Bethany North Little Rock, Arkansas 72117 (501) 887-5874
- Eldorado	Ms. D. Richardson 1777 Longview Camden, Arkansas 71701 (501) 636-7817
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-Springdale	Mr. C. Thornton 7872 McConnell Road Fayetteville, Arkansas 72701 (501) 242-6132
-Jonesboro	Ms. T. Keller 792 Parker Road Jonesboro, Arkansas 72401 (501) 297-7578
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-Dodge City	Ms. B. Foster 270 Military Dodge City, Kansas 67801 (316) 512-3152
-Parsons	Mr. K. Becker 1550 East Main Parsons, Kansas 67357 (316) 941-7639
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-Great Bend	Ms. S. Bock 5101 Canterbury Hayes, Kansas 67601 (913) 665-0166
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-Eldon	Ms. C. Head U.S. 45 Hwy. 78 Eldon, Missouri 65026 (314) 293-9756
-Springfield	Ms. C. Werth 9111 West Florida Springfield, Missouri 65804 (417) 638-7000
-St. Louis Salisbury	Mr. S. Bocklage 1220 Salisbury St. Louis, Missouri 63107 (314) 427-2301

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-Ponca City	Ms. J. Cooper 212 East Brookfield Ponca City, Oklahoma 74601 (405) 772-7212
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-Mineral Wells
-Wichita Falls
-Denison
-Paris
-McKinney
-Greenville
-Tyler
-Longview
-Clevurne
-Gainsville
-Corsicana
-Regal Row
-Bell Plaza

Houston, Texas
-Beaumont(Secondary)
-Beaumont
-Port Arthur
-Silsbee
-Liberty
-Jasper
-Cleveland
-Loop Central
-Columbus
-Nacogdoches
-Brenham
-Rosenburg
-Freeport
-Alvin
-Galveston
-Bay City
-Eskridge
-Huntsville

San Antonio, Texas
-San Antonio (Secondary)
 -Eagle Pass
 -Uvalde
 -New Braunfels
 -Austin
 -Laredo
 -Tempo
 -Metro
 -Waco
-Corpus Christi (Secondary)
 -Brownsville
 -Harlingen
 -McAllen
 -Sunbelt
 -Kingsville
 -Beeville
 -Corpus Christi
 -Victoria
 -Kennedy
-Lubbock (Secondary)
 -Midland
 -Big Springs
 -Albine
 -Amarillo
 -Monhan
 -Odessa
 -Lubbock
-El Paso

Note: Texas is unable to provide the correct names and addresses of its supplies attendants at this time.

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-Austin
-Laredo
-Tempo
-Metro
-Waco
-Corpus Christi (Secondary)
-Brownsville
-Harlingen
-McAllen
-Sunbelt
-Kingsville
-Beeville
-Corpus Christi
-Victoria
-Kennedy
-Lubbock (Secondary)
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-Big Springs
-Abilene
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(512) 538-4359
Ms. S. Brooks
8201 Longhorn
Austin, Texas 78529
(512) 708-2465
Mr. F. Arnold
7005 Kearney
Laredo, Texas 78040
(512) 237-4161
Mr. P. Williams
9306 Hanmore
Harlingen, Texas 78550
(512) 241-7538
Mr. L. Turner
5420 Sunbelt Drive
Corpus Christi, Texas 78408
(512) 892-1946

Ms. P. Whittington
3610 Avenue J
Lubbock, Texas 79408
(806) 471-5908
Ms. D. Chandler
816 Kerry Road
Midland, Texas 79704
(915) 765-3620
Ms. J. Davis
12815 Mays Street
Amarillo, Texas 79199
(806) 734-0115
Mr. B. Hill
41200 Pellicano
El Paso, Texas 79935
(915) 359-3060

Houston
-Beaumont(Secondary)
-Beaumont
-Port Arthur
-Silsbee
-Liberty
-Jasper
-Cleveland
-Loop Central
-Columbus
-Nacogdoches
-Rosenburg
-Brenham
-Freeport
-Alvin
-Galveston
-Bay City
-Eskridge
-Huntsville

Ms. H. Miller
10255 Executive Blvd.
Beaumont, Texas 77707
(405) 482-9562
Mr. B. King
2302 East Main
Eagle Lake, Texas 77434
(409) 872-2395
Mr. J. Harris
4511 West Jackson
El Campo, Texas 77437
(409) 354-2809
Mr. R. Roy
1306 North Houston
Wharton, Texas 77488
(409) 235-2027
Mr. J. Hammer
4215 Austin Street
Columbus, Texas 78934
(405) 455-2122
Ms. S. Bruce
7600 Key Street
Brenham, Texas 77833
(409) 308-1033
Ms. A. Thomas
8115 Avenue A
Rosenburg, Texas 77471
(713) 234-3774
Ms. R. Lucas
7911 Brazosport
Freeport, Texas 77541
(409) 832-3232

Ms. J. Taylor
1800 Mustang
Alvin, Texas 77511
(713) 432-1716
Ms. H. Meeks
4001 Avenue W
Bay City, Texas 77414
(405) 524-5707
Mr. S. Mendez
1818 Eskridge
Houston, Texas 77023
(713) 392-3177
Mr. J. Fredericks
1215 Mandell
Houston, Texas 77006
(713) 215-9755
Mr. J. Hall
506 Briar Forest
Houston, Texas 77077
(713) 934-5110
Mr. E. Long
4123 Studemont
Houston, Texas 77007
(713) 368-1544
Ms. S. Cap
8812 Dwyer
Houston, Texas 77090
(713) 850-2415
Mr. D. Richards
4426 Windsor
Huntsville, Texas 77430
(409) 925-0701

State SORD Coordinators

ARKANSAS — Ms. S. Thompson
4114 West Capitol, Room 729
Little Rock, Arkansas 72201
(501) 733-5190

KANSAS — Ms. L. Riley
4220 East 6th, Suite 900B
Topeka, Kansas 66604
(913) 629-8006

MISSOURI — Ms. M. Taylor
4100 North Tucker, Room 711
St. Louis, Missouri 63101
(314) 724-4077

OKLAHOMA

Ms. J. Hayes
9121 Dean A. McGee, Room 1767
Oklahoma City, Oklahoma 73102
(405) 623-6007

TEXAS

Ms. M. Johnson
8100 East Main, Room 1505
Houston, Texas 77002
(713) 251-8448

Mr. T. Harper
2600 North Pearl, Room 654A
Dallas, Texas 75201
(214) 475-6811

Mr. B. Bell
7600 North Pearl, Room 4256F
Dallas, Texas 75201

Provide a list of the specific job responsibilities of each Materials Management employee directly related to the CIMS/LV System Operation:

Project Manager
- Represent users to developers
- Represent users to operations people in matters that would concern the user group
- Make efficient and economic use of the system.

CIMS/LV Company Administrator
- Responsible for CIMS/LV company data base
- Performs operational reviews of Area Administrative staffs after implementation
- Develops operation review procedures for Area Administrators
- Develops and maintains all procedures and practices needed within the company for CIMS/LV
- Supervises maintenance of all CIMS/LV reference files
- Provides training to Area Staff on system usage and management responsibilities
- Perform economic evaluation of new system options as they become available for incorporation
- Represents company at user group meetings held by AT&T-IS
- Implements system enhancements
  - Performs required training of Area Personnel
  - Updates Methods and Procedures involved
  - Coordinates with AT&T-IS where necessary

- Determines CIMS/LV report requirements and distribution
- Analyzes CIMS/LV reports from Materials Management perspective
- Develops Materials Management guidelines for Area Administrators use of CIMS/LV data
- Supervises the compilation and distribution of performance statistics to be used in executive reviews with Inventory Management and Product Management.

CIMS/LV Area Administrator

- Authorizes and controls movement of all equipment controlled by CIMS/LV
- Sets and reviews maintenance spare levels at all inventoried locations in accordance with the levels of service outlined by the Inventory and Product Management personnel during the tariffing of the product
- Maintains spare equipment levels at field locations
  - Makes field visits
  - Performs operational reviews
- Coordinates recall programs with field
- Provides assistance to field on service and quality problems
- Coordinates with "C" Stock Administrator responsible for the areas of
  - Keep lists
  - WECO Interface (balances and shipments)
  - Stocking decisions as developed jointly by Materials Management and Inventory Management
- Analyze CIMS/LV reports for the Area
- Implement changes in procedures and stocking arrangements as required
- Supervises input of all movement and inventory data into the CIMS/LV System within the Area
- Maintain emergency shipping network
  - Determines parameters
  - Authorize overrides.

CIMS/LV Company Administrator Clerk

- Periodically input changes into the CIMS/LV Company data base guided by instructions from the Company Administrator
- Updates the WECO Interface on a daily basis
- Reconcile errors generated by the RMDS-CIMS/LV WECO Interface
- Distributes monthly reports
- Performs miscellaneous clerical duties.

CIMS/LV Area Administrator Clerk

- Performs daily inputting of all service orders and equipment orders
- Performs daily inputting of all returns for the Area
- Performs daily inputting of all completions (installs) for the Area
- Performs daily inputting of all replacements for the Area
- Performs daily inputting of all removals (disconnects) for the Area
- Performs daily inputting of all transfers of equipment for the Area
- Performs daily inputting of all Returned Material Tags (accepts) for the Area
- Periodically input data in the form of shipments into the system when notified of local movement between locations in the Area
- Periodically input changes into the network parameters as directed by the Area Administrator
- Provides miscellaneous clerical support for the Area Administrator
- Reconcile CIMS/LV System errors generated by the RMDS-CIMS/LV WECO Interface.

Corporate Warehouse Supplies Coordinator

- Responsible for not accepting untagged equipment
- Responsible for returning untagged equipment to the location from which the equipment was sent
- Responsible for returning untagged equipment in the same package in which it was shipped with a note stating that the equipment cannot be accepted without a SD-44-507.1 Returned Material Tag attached.
- Responsible for keeping a log of equipments shipped from locations that cannot be identified. The log of received equipments should be compiled by quantity and equipment type of each unit; and forwarded to the Area Administrator
- Responsible for removing Copy C of the SD-44-507.1 Returned Material Tag and forwarding the copy to the CIMS/LV Area Administrator
- Responsible for forwarding copies of the Returned Material Tag to the CIMS/LV Area Administrator when a piece of equipment is returned to the Corporate Warehouse with either the A or B section of the tag attached.

Supplies Attendant
- Responsible for ordering, receiving, stocking, disbursing and inventorying plant telephone supplies and tools
- Performs turnaround work on recovered telephone sets
- Loads motor vehicles and drives supply truck or other motor vehicle
- Loads and unloads material
- Operates power-driven material handling equipment
- Prepares and maintains related records and reports
- Performs other generally associated functions
- Completes Returned Material Tag when returning equipment to the Corporate Warehouse
- Forwards receipted copy of the Purchase Order for non-stocked data and teletype equipment to the CIMS/LV Area Administrator.

Provide the titles of other participants that contribute to the overall CIMS/LV System Operation:

- State SORD Coordinator
- OCS Equipment Engineer
- Network I&M Technician
- Network I&M Supervisor

Provide the titles and addresses of the second, third, fourth and fifth level managers impacted by the CIMS/LV Operation:

Second Level Coordinates
Staff Manager-Mechanized Systems
Mr. J. Doe
1100 South Broadway, Room 4800
St. Louis, Missouri 63101

(VACANT)
NOTE: First Line Reports Directly to District Level
Little Rock Arkansas

Staff Manager-Materials Management
Mr. T. Vault
7035 Western
Topeka, Kansas 66604

Staff Manager-Materials Management
Ms. K. McGhee
1001 Woods Mill Road, 12th Floor
Ballwin, Missouri 63011

Staff Manager-Materials Management
Mr. T. Berlin
777 Dean A. McGee, Room 4800
Oklahoma City, Oklahoma 73102

Staff Manager-Materials Management
Mr. O. Jackson
99 Bell Plaza, 42nd Floor
Dallas, Texas 75202

Manager-Warehouse Operations
Mr. A. Ashley
244 East Mockingbird Drive
Dallas, Texas 75206

Manager-Warehouse Operations-Mo/Tx
Mr. B. Colt
9881 E. Mockingbird Drive
Dallas, Texas 75206

Third Level Coordinates
District Staff Manager-Stock Maintenance
Mr. D. D. Phillips
400 South Broadway, Room 100
St. Louis, Missouri 63102

District Staff Manager-Motor Vehicles-Materials-
Administrative Support
Mr. D Lloyd
2112 East Capitol, Room 797
Little Rock, Arkansas 72201

District Staff Manager-Support Services
Mr. C. Hill
331 West 6th Street, Room 400
Topeka, Kansas 66604

District Staff Manager-Materials Management
Mr. J. Nosley
1771 Woods Mill Road, Room 700
Ballwin, Missouri 63011

District Staff Manager-Motor Vehicles & Materials
Mr. D. Hall
789 Dean A. McGee, Room 550
Oklahoma City, Oklahoma 73102

District Staff Manager-Materials Management
Mr. C. Hodge
8100 Main, Room 470
Houston, Texas 77002

District Staff Manager-Materials Management
Mr. B. Spright
80 Bell Plaza, 10th Floor
Dallas, Texas 75202

District Manager-Corporate Warehousing
Mr. D. Bell
5887 West Mockingbird Drive
Dallas, Texas 75206

Fourth Level Coordinates
Division Staff Manager-Materials Management
Mr. J. Little
800 South Broadway, Room 200
St. Louis, Missouri 63102

Division Staff Manager-Support Services
Mr. Z. Jenkins
7777 East Capitol, Room 1900
Little Rock, Arkansas 72201

Division Staff Manager-Support Services
Mr. C. Mueller
920 East 16th, Room 700
Topeka, Kansas 66603

Division Staff Manager-Budgets & Support Services
Mr. S. Shell
3100 South Tucker, Room 4077
St. Louis, Missouri 63102

Division Staff Manager-Support Services
Mr. L. Roberts
107 West Robinson, Room 200
Oklahoma City, Oklahoma 73102

Division Staff Manager-Materials Management
Mr. S. Williams
70 Bell Plaza, Room 2200
Dallas, Texas 75202

Fifth Level Coordinates

General Manager-Procurement
Mr. M. Webb
100 South Broadway, Room 400
St. Louis, Missouri 63101

General Manager Comptrollers
Mr. J. Paris
1001 West Capitol, Room 1405
Little Rock, Arkansas 72201

General Manager-Comptrollers & Support Services
Mr. K. Miller
120 West 6th, Room 1170
Topeka, Kansas 66603

Assistant Vice President-Centralized Services
Mr. F. Arnold
500 South Tucker, Room 2110
St. Louis, Missouri 63102

General Manager-Staff & Operator Services
Mr. A. Wooley
407 North Robinson, Room 1800
Oklahoma City, Oklahoma 73102

Assistant Vice President-Support Services
Mr. A. Green
1908 South Akard, Room 8000
Dallas, Texas 75202

Provide a list of all the CIMS/LV System documentation:

- BISP 790-205-100 "CIMS/LV System Overview" 5/82
- BISP 790-205-110 "CIMS/LV Command Language Flipchart"
- BISP 790-205-120 "CIMS/LV On-Line Message Directory"
- BISP 790-205-130 "CIMS/LV Reports Package" 6/81
- BISP 790-205-140 "CIMS/LV Request Level User Guide" 2/82
- BISP 790-205-150 "CIMS/LV Service Order Flow User Guide" 2/82
- BISP 790-205-160 "CIMS/LV Equipment Tracking" 2/82
- BISP 790-205-170 "CIMS/LV Network Administration User Guide" 3/82
- BISP 790-205-180 "CIMS/LV Repair Performance Monitoring Option User Guide" 3/82
- BISP 790-205-190 "CIMS/LV Inventory, Adjust, and Transfer Commands" 3/82

- BISP 790-205-200 "CIMS/LV Periodic Database Management"
- BISP 790-205-210 "CIMS/LV Location-User Definition User Guide" 3/82
- BISP 790-205-220 "CIMS/LV USOC-Equipment Definition User Guide" 3/82
- BISP 790-205-230 "CIMS/LV WECO User Guide" 3/82
- BISP 790-205-240 "CIMS/LV Monthly Maintenance" 3/82
- BISP 790-205-250 "CIMS/LV Inventories"
- "CIMS/LV OTSS Reports Manual"
- "CIMS/LV Enhancement Bulletins"

Provide a list of all the CIMS/LV reports generated by Monthly Maintenance:

Automatic Reports
- Executive Overview Inventory Report (EINR)
- Purge Order Listing Report (PORL)
- The Use of Adjust Report (ADJT)
- The Use of Transfer Report (TRAN)

Selected Reports
- Company Equipment to USOC Mapping Report (CEUM)
- Company USOC to Equipment Mapping Report (CUEQ)
- Disconnect Awaiting Removal Report (DARR)
- Location Inventory Analysis Report (LINR)
- Overview Inventory Analysis Report (OVNR)
- Returns In Transit Report (RINT)
- Western Electric Inventory and Service Report (WSVR)
- Off-The-Shelf System Report (OTSS)

Provide a list of the RMDS-CIMS/LV Daily and Weekly Reports generated from the Ballwin (50), Houston (51), and Dallas (52) Corporate Warehouses:

Daily Reports
- RMDS-CIMS/LV Daily Shipments
- RMDS-CIMS/LV Daily Inventory

Weekly Reports
- RMDS-CIMS/LV Weekly Inventory
- RMDS-CIMS/LV Weekly Returns

Provide a list of the CIMS/LV input requirements:

All of the CIMS/LV Area Administrators and Clerks, both at General Headquarters and the Administrative Areas, are expected to be Materials Management personnel. The responsibility for warehousing, shipping, and ordering materials resides in the Materials Management organization. These personnel will receive the necessary inputs from the following sources on a daily basis:

New Installations - Equipment will be determined by the Business Customer Services Equipment Engineer after receipt of the Service Order. Requirements will then be forwarded to the CIMS/LV Area Administrator for acquisition which may be either by ordering new or reusing existing stock.

Maintenance - Equipment will be requested by telephone call or written request from associated Materials Management storeroom personnel to the CIMS/LV Area Administrator. The storeroom personnel will activate requests based on requests from the maintenance personnel with adequate substantiation of need, such as a trouble ticket number.

Disconnects - Information will be printed off the SORD Network at the IFM Centers. IFM Centers forward copies to the CIMS/LV Area Administrator in the initial stages. After IFM operation is fully mechanized, work schedules for disconnect activity can be forwarded.

New Purchases and Returns - Information from Western Electric's RMDS System will be supplied to the CIMS/LV System nightly via T-Tran arrangements.

Provide a detailed outline of the dial-up procedures to access System "P" where CIMS/LV resides:

A. Instructions and Telephone Numbers Regarding New Logon Procedures :

- Dial the appropriate access number. When you hear a high-pitched tone place the telephone handset in the acoustic coupler. If dedicated access is being used, then enter TWO CARRIAGE RETURNS and proceed to step 3.

- Enter CARRIAGE RETURN, semi-colon, CARRIAGE RETURN.

- The packet network will respond with a message followed by your terminal port address and prompt you to identify your terminal model. Type F1 and enter a CARRIAGE RETURN.

  e.g., "MESSAGE"
  30516E
  TERMINAL - F1 (carriage return)

- In response to the prompt character,@, type C for "connect", skip a space, type 851102 for the network address of the computer, and enter a CARRIAGE RETURN.

  e.g., @C 851102 (carriage return)

- The packet network will respond with:

  e.g., NNNNNNA CONNECTED

- Enter the carriage return twice. The system will respond with:

  VM/CMS ONLINE SYS P LINE [redacted]

- You can now logon in the usual manner:

  e.g., L userid password acinfo

B. Access Telephone Numbers:

Little Rock, Arkansas	(501) 273-6614
Topeka, Kansas	(913) 323-9088
St. Louis, Missouri	(314) 214-9049
Oklahoma City, Oklahoma	(405) 322-6544
Texas (Centralized)	(512) 252-4080
- Dallas - 300 BPS	(214) 874-7210
-1000 BPS	(214) 874-7136
- Houston	(713) 727-8011
	(713) 453-2234
- San Antonio	(512) 408-4800

C. Telephone Numbers for Network Inquiries:

Public Packet Network Hotline (305) 866-6688	9:00 A.M.-5:00 P.M. Monday - Friday
Public Packet Network Customer Service (800) 743-7304	After 5:00 P.M. Monday-Friday and all day Saturday and Sunday

D. Information needed when reporting trouble on the public packet network:

- Terminal port address; this is the string of five digits after the "message" state (e.g. 30516E).
- The network address, which is 851102.
- Description of the problem encountered.

NOTE: VM/CMS Hotline Number - (201) 650-7816

List educating and training approaches available to the Materials Management CIMS/LV field personnel:

- Annual seminars and group instructions will provide an avenue to reach many of the Network and Materials Management personnel.
- Procedural training is another approach to educating the Network and Material management personnel. Written procedures describing his/her activities would become the primary method of learning.

- Simulation environment is yet another approach which would allow an individual to perform the proposed activities until an acceptable level of performance is attained. The CIMS/LV System maintains a training data base which would allow an individual to practice inputting typical inventory transactions.

- On-the-job training is perhaps the most widely used approach to training operating personnel; simply put them to work. Usually the individual is assigned simple tasks and given specific instructions on what is to be done and how it is to be done. As these initial tasks are mastered, additional tasks are assigned.

Training in the form of a seminar will be provided by the Company Administrator:

A. Area Administrators attending seminar:

- Ms. P. Jenkins
- Mr. S. Banks
- Mr. L. King
- Ms. M. Thomas
- Ms. R. Riley

B. Date of seminar session(s):

- June, 1984

C. Location of seminar session(s):

- 4500 North Broadway, Room 1800
  St. Louis, Missouri 63101

D. Individual responsible for training:

- Ms. S. Harris

Note: Group discussion is encouraged. Each Area Administrator will receive special CIMS/LV documentation to assist them in overcoming the current CIMS/LV Operational problems.

Problem Areas of the CIMS/LV Operation:

- Review the "Problem Areas of the CIMS/LV Operation" with the various General Managers of the Network and Support Services Divisions in each Administrative Area.

- Review "Problem Areas of the CIMS/LV Operation" with the CIMS/LV Area Administrators. (See Exhibit KK.)

Revised Returned Material Tag:

- Review the revised Returned Material Tag with the CIMS/LV Area Administrators. (See Exhibit L.)

Test data entered into the CIMS/LV System:

- Test input to determine if the various forms meet design rules and are completed correctly by each work group impacting the CIMS/LV Operation.

- Example: By testing the performance of the technician and supplies attendant in regards to completing the revised Returned Material Tag, additional on-the-job training can be given to correct inadequacies.

Written Procedures:

- Written procedures, such as the CIMS/LV Users Manual, are tested by reviewing and editing its contents. The contents should be checked for correctness by all concerned personnel. (See Exhibits M, N, and O.)

List concerns and information requirements needed by Materials Management from Network Operations:

- Identify the Network personnel whose job responsibilities impact the CIMS/LV System Operation.

- What are the specific job responsibilities of the Network personnel impacting the CIMS/LV Operation?

Problem Areas in the CIMS/LV Operation

Problem #1: No RMDS-CIMS/LV System interface for substitutions/ switches and unmatched quantities of equipment.

Cause: RMDS-CIMS/LV System interface is designed to generate error messages whenever an order fails to match the quantity ordered or inappropriate list codes are substituted on a particular requisition.

Examples:

212AL1/2 IN COMPANY DATABASE BUT NOT ON 51950184
NO ITEMS IN THE ORDER WERE SHIPPED
51950184 SHIP NOT ENTERED

Equipment type does not appear on the Southwestern Bell requisition order stored in the CIMS/LV data base.

212ARL1A NOT SHIPPED - EXCEEDS QUANTITY ORDERED
NO ITEMS IN THE ORDER WERE SHIPPED
51966684 SHIP NOT ENTERED.

Quantity of equipment shipped by Western Electric is greater than the amount requested on the order in CIMS/LV. If the order is incorrect, it should be updated to reflect the amount sent (MOD EO or MOD SO) and then shipped manually (SHIP). If the CIMS/LV order is correct, the equipment should be returned to the Corporate Warehouse (RET) or sent to another location that needs the equipment (TRAN or EO). In the meantime, an adjustment should be made to the spare stock total at the receiving location (ADJ) to reflect the current inventory level.

50916589 PARTIAL SHIP ENTERED.

Western Electric has started shipment on a requisition order, but not all items were shipped.

50929586 IS INVALID REQUISITION NUMBER
THE FOLLOWING ITEMS IN THE DATABASE WERE REQUESTED

EQUIPMENT	NEW	REPC	CWSS	NOTES
47B1	1	0	0	

50929586 SHIP NOT ENTERED.

Western Electric shipment data cannot find a matching requisition number in the CIMS/LV data base.

NO ITEMS IN THE DATABASE WERE REQUESTED
50921699 SHIP NOT ENTERED

Equipment items listed in the CIMS/LV data base were not requested by Western Electric, therefore the items were not shipped by Western Electric.

Negative Effects: -Reconciling the error messages is time-consuming
-Extensive research such as: telephone calls, use of different manuals and BISPs, etc. is sometimes required to reconcile errors
-Work efforts have to sometimes be duplicated in order to reconcile errors.

Solution:

-CIMS/LV Area Administrators and clerical staff must adhere to the present BISPs, CIMS/LV Flipchart, User's Guide, OTSS Reports Manual and CIMS/LV Training Manual.

-Educate both the Materials Management employees as well as the Network Field Forces in the correct application of the CIMS/LV Operation.

-Have a full-time dedicated staff of people to run the CIMS/LV Operation.

-CIMS/LV Area Administrators and clerical staff must form a good working relationship with all work groups (Engineering Group, Network Field Forces and the Materials Management/Network-Supply Attendants) in order to receive assistance in reconciling problems with requisitions.

Problem #2: Improper Handling of Returned Material Tag

Causes:

-Network Field Forces are either not completing the Returned Material Tags or failing to complete sections of the tag which contributes to the accuracy of the CIMS/LV data base.

-Returned Material Tags are not being completed on:

Disconnected Equipment
Transfer Equipmmet (removing)
Reused Equipment
Maintenance Replacement of Equipment (failed in-service)
Returned Equipment (excess stock)

-Network Field forces and the supply attendants are returning equipment to the Corporate Warehouse without a tag.

-Corporate Warehouse personnel in some cases are accepting returned equipment without a Returned Material Tag.

-When tagged equipment is returned to the Corporate Warehouse, the personnel are failing to remove and forward copy C of the Returned Material Tag to the CIMS/LV Area Administrator on a daily basis.

-There's a question as to which work group (SWB Corporate Warehouse personnel or CIMS/LV AAD clerial staff) should be responsible for accepting (or loading) copy C of the Returned Material Tag into the CIMS/LV System.

Negative Effects: -Untagged equipment is lost in Corporate Warehouse "C" Stock

-Untagged equipment causes inventories to be incorrect

-Difficult to follow the movement of untagged equipment in CIMS/LV data base

-Untagged equipment contributes to the inaccuracy of the Monthly Maintenance Reports

-Stock-piling takes place when equipment is untagged

-Incomplete listing of the Equipment Type/List Number section on the tag causes incorrect equipment tracking data to be entered into the CIMS/LV data base.

-Teletype equipment returned to the Telephone Company Storeroom must also provide all associated USOC Option(s) which make up a complete terminal. When TTY Equipment/USOC Option(s) are not listed on the tag, these TP-parts are automatically lost in the Corporate Warehouse inventory.

Solution: Educate Field Forces regarding the importance of completing the Returned Material Tag.

Enforce strict adherence to the Bell System Practice, SECTION 590-009-100.

Hold annual seminars with the Network Field Forces and Materials Management personnel.

Problem #3: In order to fill a requisition Stock Maintenance has to sometimes source part of the stock from another Corporate Warehouse. As a result the House ID on the original requisition number is changed.

Causes: Original requisitions are generated by the OCS Engineering group and copies are forwarded to the Regional Stock Maintenance group and the CIMS/LV Area Administrators.

The CIMS/LV Area Administrator matches the orignal requisition against a Service Order and this information is entered into the CIMS/LV data base.

Stock Maintenance fills the requisition order and enters the requisition into the Timeshare RMDS System if all the items are stocked at the same Corporate Warehouse. Sometimes in order for Stock Maintenance to meet a quantity demand, part of the stock has to be sourced from another Corporate

Warehouse. This means the first two numbers of the requisition is changed and the CIMS/LV Area Administrator is never informed of the change.

When WECO (RMDS-CIMS/LV interface) is processed an error message is generated.

Example: Original Requisition Order Number:

```
50900228    BACKORDER INFORMATION
THE FOLLOWING ITEMS WERE BACKORDERED
EQUIPMENT                    QTY
TP403400                       1
TP410015                       2
40P102ZZ                       1

TP403400  NEW SUBSTITUTED FOR REPC.
TP410015  IN COMPANY DATABASE BUT NOT ON 50900228
40P102ZZ  NEW SUBSTITUTED FOR REPC.
50900228  BACKORDER ENTERED
```

Sourced Requisition Order Number:

```
52900228  IS INVALID REQUISITION NUMBER
TP408065  IS INVALID EQUIP. FOR S.W. BELL
THE FOLLOWING ITEMS IN THE DATABASE WERE REQUESTED
EQUIPMENT                    NEW REPC CWSS     NOTES
212AL1/2                       1    0    0
40CAB251ZZ                     1    0    0
40CAB901AJ                     2    0    0
40C204BA                       1    0    0
40DL291BS                      1    0    0
40K1010AK                      1    0    0
40PSU101                       1    0    0
52900228    SHIP NOT ENTERED
```

Each Sourced Equipment item associated with Requisition 52900228 will have to be shipped manually in the CIMS/LV data base:

```
INWARD MOVEMENT FOR OKLA
                    EXSH                                          SHIP
    SOURCE          DATE SEND LOCN   EQUIP       Q STYP        DATE
                                                                  BO Q*
E1 52900228  04/21 KCSC
 1                                   212AL1/2    1 NEW         04/09
 2                                   40CAB251ZZ  1 NEW         04/09
 3                                   40CAB901J   2 NEW         04/09
 4                                   40C204BA    1 NEW         04/09
 5                                   40DL291BS   1 NEW         04/09
 6                                   40K101CAK   1 NEW         04/09
 7                                   40PSU101    1 NEW         04/09
E18 50900228 04/21 KCSC
 5                                   40MN101AA   1 NEW         04/09
 7                                   TP405563    1 NEW         04/09
 8                                   TP410018    1 NEW         04/09
10                                   TP410770    1 NEW         04/09
11                                   40CAB201ZZ  1 NEW         04/09
12                                   40P102ZZ    1 NEW           1 *
```

13	TP400645	1 NEW	04/09
15	40PWU102	1 NEW	04/09
17	TP403400	1 NEW	1 *
19	TP410015	3 NEW	04/10

Negative Effects: Requires extra time and effort to reconcile system errors.

Solution: Sourcing of stocked items is only done on 5% of all requisition orders filled by the Stock Maintenance group. Since the sourcing level is so low, on requisition orders, it would require less effort by the CIMS/LV clerical staff to reconcile the error messages than it would for the Stock Maintenance group to mail sourcing corrections/changes to all CIMS/LV Area Administraotrs. In other words, the CIMS/LV Area Administrator and clerical staff should be responsible for reconciling error messages generated due to sourcing.

Problem #4: "Returned Material Tag" - SD-44-507.1 (7-82) and the Bell System Practice, Section 590-009-100, Issue 2, January 1983 need to be revised.

Cause: Due to divestiture, (January 1, 1984) Southwestern Bell now operates under a different environment. Many functions in the field have changed, such as the Returned Material Tag and the instructions for the Tag, BSP Section 590-009-100. Both the Tag and the Practice contain obsolete information.

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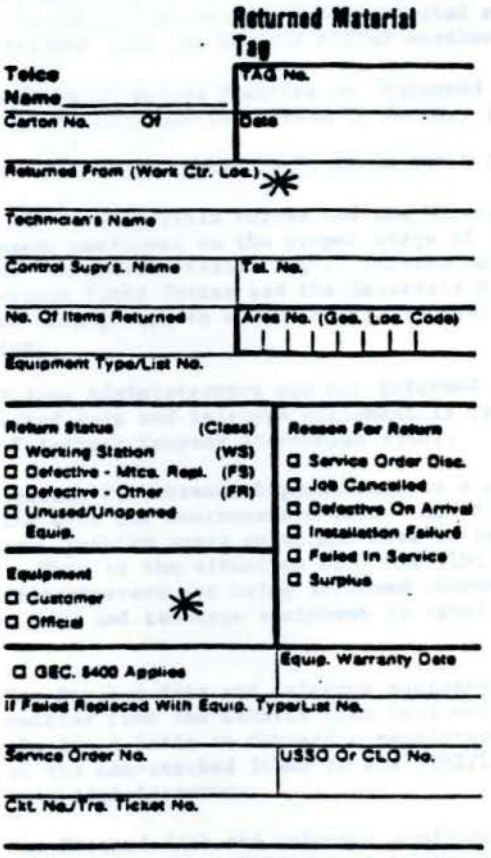
Example:



Returned Material Tag

Telco Name _____ | TAG No.

Carton No. ____ Of ____ | Date

Returned From (Work Ctr. Loc.) *

Technician's Name

Control Supv's. Name | Tel. No.

No. Of Items Returned | Area No. (Geo. Loc. Code)

Equipment Type/List No.

Return Status (Class)
- ☐ Working Station (WS)
- ☐ Defective - Mtce. Rept. (FS)
- ☐ Defective - Other (FR)
- ☐ Unused/Unopened Equip.

Reason For Return
- ☐ Service Order Disc.
- ☐ Job Cancelled
- ☐ Defective On Arrival
- ☐ Installation Failure
- ☐ Failed In Service
- ☐ Surplus

Equipment
- ☐ Customer
- ☐ Official

*

☐ GEC. 8400 Applies | Equip. Warranty Date

If Failed Replaced With Equip. Type/List No.

Service Order No. | USSO Or CLO No.

Ckt. No./Trs. Ticket No.

* Areas that changed due to divestiture.

Negative Effects: -Issue 2, SECTION 590-009-100 of the Bell System Practice gives instructions to the technician/supply attendant to complete and attach a tag to all data sets, data terminals, and other communications equipment and/or protective packaging cartons. The Practice makes no mention of teletype equipment showing all USOC Option(s) that make up a complete terminal. The - 7/82 "Returned Material Tag" gives instructions to the technician/supply attendant to complete and attach a tag to Equipment Type/List Number. Once again there's no mention of Teletype Equipment/USOC Option(s).

-The Tag and Practice contain information that's obsolete.

-Network Field Forces were instructed and trained (per Issue 2, SECTION 590-009-100 of Bell System Practice) one way, whereas the CIMS/LV personnel were instructed and trained (per the CIMS/LV BISPs) another way.

Solution: -Revise the Bell System Practice on "Returned Material Tag", Section 590-009-100, Issue 2, January 1983.

-Revise "Returned Material Tag", SD-44-507.1 (7-82).

-Train the Network Field Forces and the Materials Management personnel on the proper usage of the revised "Returned Material Tag". Enforce both the Network Field Forces and the Materials Management work groups to adhere to the revised Practice.

Problem #5: CIMS/LV Area Administrators are not informed whenever non-stocked data and teletype equipment is received at the Telephone Company Storerooms (TCS).

Cause: The Corporate Procurement Organization is a new operating area for Southwestern Bell. As with anything new, problem areas exist and have to be ironed out. This is the situation with the CIMS/LV Area Administrators not being informed whenever non-stocked data and teletype equipment is received at the TCS.

Negative Effects: Non-Stocked data and teletype equipment are omitted from the CIMS/LV data base whenever the field fails to forward a receipted copy of the non-stocked items to the CIMS/LV Area Administrator.

-Non-Stocked data and teletype equipment omitted from the CIMS/LV data base are lost in the Corporate Warehouse inventory.

-Defeats the purpose of the CIMS/LV tracking system.

-Leaves an open door to stockpile equipment..

Solution: Develop Methods and Procedures instructing the field to forward receipted copies of all non-stocked data and teletype equipment to the CIMS/LV Area Administrator.

Problem #6: Southwestern Bell CIMS/LV USOC to Equipment Tables and AT&T-IS CIMS/LV System Tables need to be revised.

Cause: Western Electric will occasionally ship an updated version of a particular price of equipment. Usually the updated version is a new product which has not been added to the System Tables. When this type of shipping takes place, an error message is generated by the RMDS-CIMS/LV interface to alert the user of the situation.

Example:

```
47A1          IS INVALID EQUIP FOR S.W. BELL
NO ITEMS IN THE DATABASE WERE REQUESTED
52983158      SHIP NOT ENTERED

HOLDER COPY H981A   IS INVALID EQUIP FOR S.W. BELL
NO ITEMS IN THE DATABASE WERE REQUESTED
52983178      SHIP NOT ENTERED
```

This message informs the user that the specified equipment was reported shipped by Western Electric and is valid for tracking by CIMS/LV, but Southwestern Bell has chosen not to include it in the CIMS/LV data base. This message helps to identify equipment that is active in the inventory loop, and probably should be considered for tracking.

```
52921789   BACKORDER INFORMATION
THE FOLLOWING ITEMS WERE BACKORDERED
EQUIPMENT                    QTY
JY3!                           1
202SRL1C                       1

JY3!   DOES NO EXIST IN THE SYSTEM DATABASE
202SRL1C  NEW SUBSTITUTED FOR REPC.
52921789  BACKORDER ENTERED
```

Occasionally, the Western Electric equipment nomenclature does not match with Southwestern Bell's CIMS/LV equipment description or the specified equipment shipped by Western Electric does not exist in teh CIMS/LV data base. If the Southwestern Bell Company Administrator determines that the information as reported by Western Electric is correct, the company's AT&T-IS CIMS/LV Support Personnel must be contacted in order to add the equipment to the System Tables.

Negative Effects: Error messages generated due to invalid equipment causes the following problems:

-Creates extra time and work effort for the CIMS/LV clerical staff.

-Unnecessary time and effort is generated by researching the errors.

-Research causes a loss in the quantity of work generated on a daily basis by the CIMS/LV clerical staff.

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Solution: **Coordination between the following work groups would suffice in keeping the Southwestern Bell CIMS/LV USOC to Equipment Tables and AT&T-IS CIMS/LV Systems Tables up-to-date:**

- **-CIMS/LV Company Administrator**
- **-CIMS/LV Area Administrators**
- **-OCS Engineering**
- **-AT&T-IS Support Personnel**
- **-AT&T-IS Data Systems**

EXHIBIT L
Page 1

360.0604 - Materials Management-Machanization-CIMS/LV

St. Louis, April 25, 1984

DISTRICT STAFF MANAGER-NETWORK CO OPERATIONS:

Attached is a proposal to revise Returned Material Tag SD-44-507.1. This revision is needed in order to capture all returns on data and teletype equipment for the purpose of identifying the return status of equipment, identifying the reason for the return of equipment and to satisfy the reporting needs of the Centralized Inventory Management System for Low Volume (CIMS/LV) products.

Also, attached is a revised description of the tag and instructions for filling out the tag.

Should you agree to the above proposal, please have someone from your staff work with Mr. Rick Johnson or Ms. Sandra Harris, of my staff, in the revising of the tag.

Mr. Johnson can be reached at 747-1590 and Ms. Harris at 747-1576.

District Staff Manager-
Stock Maintenance

Attachments

CC: STAFF MANAGER-NETWORK MAINTENANCE

SAH/fta

RETURNED MATERIAL TAG
DATA SETS AND TERMINAL
EQUIPMENT FOR
CIMS/LV TRACKING

TAG NUMBER _____ (PREPRINTED)

DATE _____

SHIP TO: SOUTHWESTERN BELL TELEPHONE COMPANY

_____ (ADDRESS)

_____ (CITY, STATE)

___RETURN
___REPLACEMENT
___TRANSFER

RETURNED FROM: _____ (TELEPHONE COMPANY STOREROOM)

CITY: _____

TECHNICIAN'S NAME: _____
TELEPHONE NUMBER: _____
SUPERVISOR'S NAME: _____ (PERSON COMPLETING TAG)

(USE ONE TAG PER ITEM RETURNED AND ATTACH TO EQUIPMENT)

EQUIPMENT TYPE/
LIST NUMBER _____

QUANTITY OF
ITEMS RETURNED _____

TTY EQUIPMENT/
USOC OPTION(S) _____

RETURN STATUS	REASON FOR RETURN						
	SERVICE ORDER DISCONNECT	JOB CANCELLED	DEFECTIVE ON ARRIVAL	INSTALLATION FAILURE	FAILED IN SERVICE	SPARE EQUIPMENT	GEC. 8400 APPLIES
WORKING STATION (WS)							
DEFECTIVE-MTCE. REPL (FS)							
DEFECTIVE-OTHER (FR)							
UNUSED/UNOPENED EQUIPMENT							

FAILED IN-SERVICE _____ (REPLACEMENT EQUIPMENT TYPE)

SERVICE ORDER NUMBER _____ CIRCUIT NUMBER _____

FORWARD THIS PORTION OF TAG TO:

BLUE COPY 1: SUPERVISOR

WHITE COPY 2: CIMS/LV AREA ADMINISTRATOR

YELLOW COPY 3: CORPORATE WAREHOUSE SUPPLIES COORDINATOR
(SEND COPY TO CIMS/LV AREA ADMINISTRATOR)

NEUTRAL COPY 4: CORPORATE WAREHOUSE COPY
(STAYS WITH EQUIPMENT)

DESCRIPTION OF TAG

The tag is to be completed by the technician when disconnecting, transferring replacing or substituting spare equipment for data sets and terminal components; and teletype equipment showing all USOCs to make up a complete terminal. The four parts of the tag are:

(a) Copy 1 - Supervisor Copy: This copy (blue) is to be retained at the TCS. It may be attached to the disconnect service order or trouble ticket.

(b) Copy 2 - CIMS/LV Area Administrator Copy: This copy (white) is sent to the CIMS/LV Area Administrator by the TCS the same day the disconnect or replacement is completed.

(c) Copy 3 - SWB Corporate Warehouse Supplies Coordinator Copy - SEND WITH EQUIPMENT AND FORWARD TO CIMS/LV AREA ADMINISTRATOR: This copy (yellow) is sent with the equipment to the SWB Corporate Warehouse dock. The dock personnel will send this copy, upon receipt of the equipment, to the CIMS/LV Area Administrator.

(d) Copy 4 - Corporate Warehouse Copy - STAYS WITH EQUIPMENT: This copy (neutral) is sent with the equipment to the SWB Corporate Warehouse dock. It is retained with the equipment at the dock for internal use by the warehouse.

INSTRUCTIONS FOR FILLING OUT TAG

This part contains detailed instructions for completing the Returned Material Tag.

(a) Tag Number: A preprinted serialized tag number is the only type available.

(1) On all returns of single pieces of equipment, a tag with a preprinted tag number must be used.

(2) On multiequipment returns from a customer's premises, only one serialized tag is used per equipment item. A different prenumber tag is to be used for each piece of equipment associated with the disconnect/replacement return.

NOTE: Only one tag number will be used for any given disconnect service order.

(b) Date: The date the equipment is disconnected and returned from the company's premises, or the date that a return is originated from TCS shall be entered in this space.

(c) Ship to: The complete address of the Southwestern Bell Corporate Warehouse for which equipment is being shipped to.

(d) Return: Return of excess field stock to SWB Corporate Warehouse.

(e) Replacement: Equipment failed in-service, replaced with maintenance spare and defective product returned to SWB Corporate Warehouse.

(f) Transfer: Transfer of data equipment from a secondary work location to a primary work location.

(g) Returned from (Telephone Company Storeroom): The address of the TCS responsible for removal of equipment from the company's premises or return from the TCS shall be entered here.

(h) City: The city of the TCS responsible for the removal of equipment.

(i) Technician's Name. The name of the technician or employee providing the data and completing the Returned Material Tag shall be entered in this space.

(j) Telephone Number: The telephone number of the person completing the tag.

(k) Supervisor's Name: The name of the Telephone Company Storeroom supervisor shall be entered here.

(l) Equipment Type/List Number: This number identifies the type of data equipment returned. The list number must be provided on data set returns (ie, 201CLIC/2/3A/4).

(m) TTY Equipment/USOC Option(s): This discription identifies the type of teletype equipment returned. Option(s) must be provided on teletype returns (Example: TTY 40CAB251ZZ; USOC Option(s) - 40PSU101, TP410770, TP410679, TP410672, TP410002, etc.)

(n) Quantity of Items Returned: The total number of items of equipment returned in a protective carton, if applicable, shall be entered in this space. If several items are packaged in one carton, only one Returned Material Tag will be completed and associated with each carton.

(o) Return Status: Equipment being returned shall be classified as:

(1) Working Station (WS): This category includes equipment (station) that is in working or operable condition when removed from a company's premises. This means the equipment is electronically and functionally operable and has an appearance that is acceptable for reuse. The WS Classification qualifies the equipment for Working Station Plan processing, which is a shortened alternative to full repair that is performed at the SWB Corporate Warehouse. The technician must determine if the equipment to be disconnected/replaced is operable. The guidelines used in making this determination are as follows:

* Asking the (official) customer if the equipment is in working order

* Visually checking the equipment for physical and appearance damage

* Performing available equipment self-tests (ie, quick test on LOCAL, internal diagnostics, modem test, etc).

If these determinations cannot be made, it should be assumed that the equipment to be removed is a WS. One of the following blocks must be marked for returning WS equipment.

* Service Order Disconnect
* Job Cancelled
* Spare Equipment

(2) Defective - Maintenance Replacement (FS): This category includes equipment (station or components) that has failed while in service. The equipment is classified as failed in service (FS) and requires full repair processing. One of the following Reason for Return blocks must be marked when returning defective-maintenance replacement equipment:

* Defective on Arrival (if intended for use as a maintenance replacement)
* Failed in Service (FS)

(3) Defective-Other (FR): This category includes equipment (station or components), other than a maintenance replacement that has failed; has been determined to be inoperable; or does not meet acceptable appearance standards (ie, severe scratches, dirty equipment, or broken pieces, etc). As a result this equipment is classified as requiring full repair (FR). One of the following blocks must be marked when returning equipment in the Defective-Other category:

* Service Order Disconnect
* Job Cancelled
* Defective on Arrival
* Installation Failure
* Spare Equipment.

(p) Reason for Return: The return status (classification) of equipment is directly dependent upon the reason for the equipment disconnect and/or replacement. Only one Return Status block should be checked and only one Reason for Return block should be checked. (See Table A.)

(1) Service Order Disconnect: Disconnection and removal of equipment associated with a service order

(2) Job Cancelled: Service order cancellation

(3) Defective on Arrival: Equipment that does not work when received

(4) Installation Failure: Equipment that will not pass the installation performance test

(5) Failed in Service: Equipment in service that has been replaced as a result of a trouble condition

(6) Spare Equipment: Excess equipment above maintenance stocking requirements in field locations

(7) GEC 8400 Applies: This block shall be checkd if defective equipment is returned within 1 year of the manufactured date or 3 months from the last repair date stamped on the equipment.

(q) If Failed In-Service, Replaced With Equipment Type: This block shall be completed when failed equipment is replaced with same, similar, or different equipment.

(r) Service Order Number: This block shall be completed if a service order is being completed (disconnected, replaced, transferred or substituted.

(s) Circuit Number/Trouble Ticket Number: This block shall be filled in if visit is for maintenance, repair, or replacement of defective equipment.

TABLE A

RETURN STATUS	REASON FOR RETURN						
	SERVICE ORDER DISC.	JOB CANCELLED	DEFECTIVE ON ARRIVAL	INSTLN FAILURE	FAILED IN SERVICE	SPARE EQUIPMENT	GEC 8400 APPLIES
Working Station (WS)	X	X				X	
Defective-Mece. Repl. (FS)			X		X		
Defective-Other (FR)	X	X	X	X		X	
Unused/Unopened Equipment		X					

RETURNED MATERIAL TAG

GENERAL INFORMATION

CONTENTS PAGE

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2. PURPOSE 1
3. GUIDELINES FOR TAG USE 1
4. DESCRIPTION OF TAG 2
5. INSTRUCTIONS FOR FILLING OUT TAG . . 2
6. ORDERING INFORMATION 5

1. GENERAL

1.01 This section describes the purpose and use of the returned material tag. This tag must be attached to all data sets, data terminals, and other data communications equipment and/or protective packaging cartons containing equipment that has been disconnected or replaced on a customer's premises and is being returned to the Western Electric (WE) Service Center. It should also be used for returning equipment to a WE Service Center from a Field Service Work Center (FSWC).

1.02 This section is being reissued to revise the returned material tag and procedures for its use as a Bell System standard. The reasons for reissue are as follows.

(a) Information requirements to be recorded on the tag have been standardized.

(b) The order in which each of the four parts of the tag is used has been revised.

(c) The standardized tag will be available in two different forms: one with a preprinted serialized tag number and one without a tag number (blank).

Since this reissue is a general revision, no revision arrows have been used to denote significant changes.

2. PURPOSE

2.01 The recommended Bell System standard returned material tag (Fig. 1), available nationally through WE Service Centers for local use, is required on all returns of data sets, data terminals, and other data communications equipment to:

(a) Identify the return status of the equipment.

(b) Identify the reason for the return of the equipment.

(c) Satisfy the reporting needs of the Centralized Inventory Management System for Low Volume (CIMS/LV) products.

3. GUIDELINES FOR TAG USE

3.01 When implementing use of the returned material tag, the following guidelines must be carried out by the Bell Operating Companies (BOC).

(a) A tag for all equipment returns (disconnected, replaced, or surplus equipment) must be completed.

(b) The tag must be filled out accurately and completely, including all applicable information entries on the tag.

(c) All returned data equipment must be properly classified by the technician.

(d) If more than one piece of equipment is being returned from a customer's premises, only one prenumbered tag should be used. The Field Service technician must enter this tag number on copies of the blank tag for all other equipment being returned as part of that disconnect service order. Only one tag number is to be used for, or associated with, a pickup.

(e) Two white copies of the tag (copies 3 and 4) are to be returned with the service order to the

Alpha Bell **Returned Material Tag**

	TAG No.
Carton No. Of	Date
Returned From (Work Ctr. Loc.)	
Technican's Name	
Control Supv's. Name	Tel. No.
No. Of Items Returned	Area No. (Geo. Loc. Code)
Equipment Type/List No.	
Return Status (Class) ☐ Working Station (WS) ☐ Defective - Mtce. Repl. (FS) ☐ Defective - Other (FR) ☐ Unused/Unopened Equip.	Reason For Return ☐ Service Order Disc. ☐ Job Cancelled ☐ Defective On Arrival ☐ Installation Failure ☐ Failed In Service ☐ Surplus
Equipment Used By ☐ Customer ☐ Official	
☐ GEC. 8400 Applies	Equip. Warranty Date
If Failed Replaced With Equip. Type/List No.	
Service Order No.	USSO Or CLO No.
Ckt. No./Trb. Ticket No.	

Alpha 055 (5-82) FCC Item No.

1. WECo. Copy-Send With Equip.

Alpha-055 (5-82) FCC Item No.

2. Dock Receipt-Send With Equipment/CIMS/LV

Alpha-055 (5-82) FCC Item No

3. CIMS/LV Administrator Copy

Alpha 055 (5-82) FCC Item No

4. Originator Copy

Fig. 1—Returned Material Tag

FSWC. The light blue copy (copy 1) and the yellow copy (copy 2) are attached to the equipment for return to the WE Service Center.

4. DESCRIPTION OF TAG

4.01 The tag is to be completed by the Field Service technician when disconnecting, replacing or substituting a data set, terminal, or any of its components. The four parts of the tag are:

(a) ***Copy 1 — WECo. Copy — Send With Equipment:*** This copy (light blue) is sent with the equipment to the service center dock. It is retained with the equipment at the dock for internal use by WE.

(b) ***Copy 2 — Dock Receipt — Send With Equipment/CIMS/LV:*** This copy (yellow) is sent with the equipment to the service center dock. The dock personnel will send this copy, upon receipt of the equipment, to the CIMS/LV administrator, coordinator, or equivalent company administrator (CAD).

(c) ***Copy 3 — CIMS Administrator Copy:*** This copy (white) is sent to the CIMS/LV administrator, coordinator, or equivalent CAD by the FSWC the same day the disconnect or replacement is completed.

(d) ***Copy 4 — Originator Copy:*** This copy (white) is to be retained at the FSWC. It may be attached to the disconnect service order or trouble ticket.

5. INSTRUCTIONS FOR FILLING OUT TAG

5.01 This part contains detailed instructions for completing the returned material tag.

(a) ***Tag Number:*** Two types of tags are available: tags with preprinted serialized tag numbers and those without numbers (blank).

(1) On all returns of single pieces of equipment, a tag with a preprinted tag number must be used.

(2) On multiequipment returns from a customer's premises, only one serialized tag is used. The preprinted tag number is written on all other (blank) tags for equipment associated with the disconnect/replacement return.

Note: Only one tag number will be used for any given disconnect service order.

(b) ***Carton No. ___ of ___:*** When more than one protective packaging carton is required to return equipment from a customer's premises, the first carton packed is marked Carton No. 1. The total number of cartons needed to return the equipment would follow. (For example, if five cartons are needed to return equipment associated with a service order removal, the first carton packed would be marked Carton No. 1 of 5. The second carton packed would be marked Carton No. 2 of 5, etc.)

(c) ***Date:*** The date the equipment is disconnected and returned from the customer's premises, or the date that a return is originated from an FSWC shall be entered in this space.

(d) ***Returned From (Work Center Location):*** The address of the FSWC responsible for removal of equipment from the customer's premises or return from the FSWC shall be entered here.

(e) ***Technician's Name:*** The name of the Field Service technician or employee providing the data and completing the returned material tag shall be entered in this space.

(f) ***Control Supervisor's Name and Telephone Number:*** The name and telephone number of the work center control supervisor shall be entered here.

(g) ***Number of Items Returned:*** The total number of items of equipment returned in a protective carton, if applicable, shall be entered in this space. If several items are packaged in one carton, only one returned material tag will be completed and associated with each carton.

(h) ***Area Number Geographic Location Code:*** The geographic work center location code (five to seven digits) shall be entered here.

(i) ***Equipment Type/List Number:*** This number identifies the type of equipment returned. The list number must be provided on data set returns (ie, 201C LIC/2/3A/4).

(j) ***Return Status:*** Equipment being returned shall be classified as:

(1) ***Working Station (WS):*** This category includes equipment (station) that is in working or operable condition when removed from a customer's premises. This means the equipment is electronically and functionally operable and has an appearance that is acceptable for reuse. The WS classification qualifies the equipment for Working Station Plan processing, which is a shortened alternative to full repair that is performed at the WE Service Center. The technician must determine if the equipment to be disconnected/replaced is operable. The guidelines used in making this determination are as follows:

- Asking the customer if the equipment is in working order
- Visually checking the equipment for physical and appearance damage
- Performing available equipment self-tests (ie, quick test on LOCAL, internal diagnostics, modem test, etc).

If these determinations cannot be made, it should be assumed that the equipment to be removed is a WS. One of the following blocks must be marked for returning WS equipment.

- Service Order Disconnect
- Job Cancelled
- Surplus.

(2) ***Defective — Maintenance Replacement:*** This category includes equipment (station or components) that has failed while in service (ie, on a customer's premises or official service). The equipment is classified as failed in service (FS) and requires full repair processing. One of the following Reason for Return blocks must be marked when returning defective — maintenance replacement equipment:

- Defective on Arrival (if intended for use as a maintenance replacement)
- Failed in Service.

(3) ***Defective—Other:*** This category includes equipment (station or components),

other than a maintenance replacement that has failed; has been determined to be inoperable; or does not meet acceptable appearance standards (ie, severe scratches, dirty equipment, or broken pieces, etc). As a result this equipment is classified as requiring full repair (FR). One of the following blocks must be marked when returning equipment in the Defective—Other category:

- Service Order Disconnect
- Job Cancelled
- Defective on Arrival
- Installation Failure
- Surplus.

(k) ***Reason for Return:*** The return status (classification) of equipment is directly dependent upon the reason for the equipment disconnect and/or replacement. Only one Return Status block should be checked and only one Reason for Return block should be checked. (See Table A.)

(1) ***Service Order Disconnect:*** Disconnection and removal of equipment associated with a service order

(2) ***Job Cancelled:*** Service order cancellation

(3) ***Defective on Arrival:*** Equipment that does not work when received

(4) ***Installation Failure:*** Equipment that will not pass the installation performance test

(5) ***Failed in Service:*** Equipment in service that has been replaced as a result of a trouble condition.

(6) ***Surplus:*** Excess equipment above maintenance stocking requirements in field locations or on a customer's premises.

(l) ***Equipment Used By:*** One of the following blocks must be marked:

(1) ***Customer:*** Equipment on customer's premises

(2) ***Official:*** Equipment used on telephone company premises.

(m) ***GEC 8400 Applies:*** This block shall be checked if defective equipment is returned within 1 year of the manufactured date or 3 months from the last repair date stamped on the equipment.

(n) ***Equipment Warranty Date:*** The date the equipment was manufactured or repaired shall be entered only if the GEC 8400 warranty applies.

(o) ***If Failed, Replaced With Equipment Type/List Number:*** This block shall be completed when failed equipment is replaced with same, similar, or different equipment.

(p) ***Service Order Number:*** This block shall be completed if a service order is being completed (disconnect, change, or substitution)

(q) ***USSO or CLO Number:*** If applicable, the Universal System Service Order number or Common Language Order shall be entered in this block.

(r) ***Circuit Number/Trouble Ticket Number:*** This block shall be filled in if visit is for

TABLE A

RETURN STATUS	SERVICE ORDER DESCR	JOB CANCELLED	DEFECTIVE ON ARRIVAL	INSTLN FAILURE	FAILED IN SERVICE	SURPLUS
Working Station	X	X				X
Defective—Maintenance Replacement			X		X	
Defective—Other	X	X	X	X		X

maintenance, repair, or replacement of defective equipment.

6. ORDERING INFORMATION

6.01 Western Electric will arrange to stock copies of both the blank and numbered tags at the local service center upon notification by the BOC. The tags are identified as follows:

- Tag, Returned Material—Unnumbered—SD407-22
- Tag, Returned Material—Serialized—AD44-507.

Section 1

Procurement Instruction — Page 1

Requisitioning and Receiving — December, 1983

Supplies and Equipment

1.0 GENERAL

1.1 This PI addresses requisitioning and receiving supplies and equipment via OIP, "hard copy" SW-6529S (Data and Teletype), and "hard copy" SW-6528 (CAPRI Requisition).

2.0 REQUISITIONING SUPPLIES - (See Attachment A)

2.1 Field Responsibilities

2.101 The field will order stock items via OIP whenever possible.

2.102 The field will prepare a SW-6528 (CAPRI requisition) for any non-stock item or items not available via OIP.

2.103 Data and Teletype maintenance stock items will be ordered via SW-6529S. Data maintenance non-stock items will be ordered via SW-6528 (CAPRI requisition).

2.104 OCS engineering will order Data and Teletype items via SW-6529R for stock and non-stock items with a CAPRI item #. OCS Engineering will send copies of the SW-6529S to the state CIMS/LV administrators.

2.2 Stock Maintenance Responsibilities

2.201 Stock Maintenance will receive the SW-6529S and SW-6529R, and will input the order into TS-RMDS.

2.202 Stock Maintenance will process a CAPRI requisition for any non-stock item on the SW-6529R if the non-stock item has a CAPRI item #.

2.203 Stock Maintenance will send copies of the Data Maintenance requisition - SW-6529S to the state CIMS/LV administrator.

2.204 Stock Maintenance will coordinate with OCS Engineering and the AT&T Technologies "staging" coordinator on Data and Teletype orders requiring AWATing.

2.3 Corporate Warehouse Responsibilities

2.301 When the TCS/Field OIP's into Corporate Warehousing for stock materials, a Data Processing Requisition (DPR) will be generated. Corporate Warehouse will then select these materials and ship to the TCS/Field. Back ordered items will be held until replenishment stock is received. After receipting into the stock balances, the backorder will be released to the Corporate Warehouse for shipment to the TCS/Field.

Procurement Instruction
Requisitioning and Receiving
Supplies and Equipment

3.0 RECEIVING SUPPLIES - (See Attachment B)

3.1 Field Responsibilities

3.101 The supervisor or other employee who is responsible for ordering supplies, equipment, materials, tools, and test sets is also responsible for the proper handling and checking of those shipments.

3.102 There are three types of shipments received by either Telephone Centralized Storerooms (TCS) or field locations. They are Order Invoice Plan (OIP), Hard Copy SW-6528 and Hard Copy SW-6259S.

3.103 1. OIP Requisitioning/Receiving

OIP items are requisitioned via either a Touch-Tone Card Dialer or a Data Speed 40. Both methods require the use of an Authority Card. Prior to divestiture, OIP items were shipped from Western Electric to field locations. The receiving party was required to send the Packing Slip-Receipt Copy to Comptrollers for billing verification.

In the new environment, OIP items will be shipped from Corporate Warehouses. This change eliminates the need for billing verification in the field. The Packing Slip-Receipt Copy should be signed, dated, and retained locally when all items are received as ordered. A claim must be initiated by the receiving party whenever overages or shortages occur or when damaged or wrong material is received. Complete details on the filing of claims can be found in Southwestern Bell Practice, Section 746-001-901SW, or Procurement Instruction Number 1.

3.104 2. Hard Copy SW-6528 Requisitioning/Receiving

Non-stock items were previously ordered on Form FA SW-6265 which was sent to the Supply Supervisor at the Western Electric Service Center. Non-stock items are now ordered on Form SW-6528 which is sent to the Local Purchasing Office (LPO). The requestor or receiving party must sign, date, and forward the Receipt Copy of the Purchase Order to the LPO. Packing slips received from the vendor, such as Form SD-43-601E from AT&T Technologies, should be retained by the person who originated the Purchase Requisition.

Procurement Instruction
Requisitioning and Receiving
Supplies and Equipment

3.105 3. Hard Copy SW-6259S Requsitioning/Receiving

Form SW-6259S is used to order stock items of Data and Teletype equipment. This form is either sent by mail or transmitted via Data Speed 40 to Regional Stock Maintenance. The requisition is then placed on the OIP system. Receipt procedures for these items are exactly the same as for any other OIP item. Non-stock items of Data and Teletype equipment are ordered on Form SW-6528. Receipt procedures are exactly the same as for any other item ordered through the LPO via SW-6528.

3.106 When delivery is made by a transportation agency, the employee accepting delivery shall check to see that the number of containers received is the same as that shown on the delivery ticket (Bill of Lading) and shall carefully note the condition of each container on the shipment. If there is a discrepancy in the number of containers or if any containers show signs of rough handling or give evidence, such as breakage, that the contents are not in good condition, a notation of the condition of the shipment shall be made on both copies of the transportation

company's receipt form. This notation must be made and signed by the driver or other agent of the transportation company.

3.107 All shipments from all suppliers should be made "Transportation Prepaid." If shipments are received with transportation charges collect, or with additional charges due, the employee at the point of destination may pay the charges and make the notation "Paid Under Protest," on the transportation company's copy of the freight express bill and on the receipted copy to be handled for correction with the supplier. The employee should also enter on the receipted copy the requisition number and the supplies order number, if known. This information is necessary in order for the Local Purchasing Office to determine whether the charges were also paid on invoice from the supplier.

3.108 FA SW-6479 should accompany all material received from Corporate Warehouses. SW-6525 or SW-6531 should accompany material ordered from the Local Purchasing Office. If the above packing slips are not received, the employee

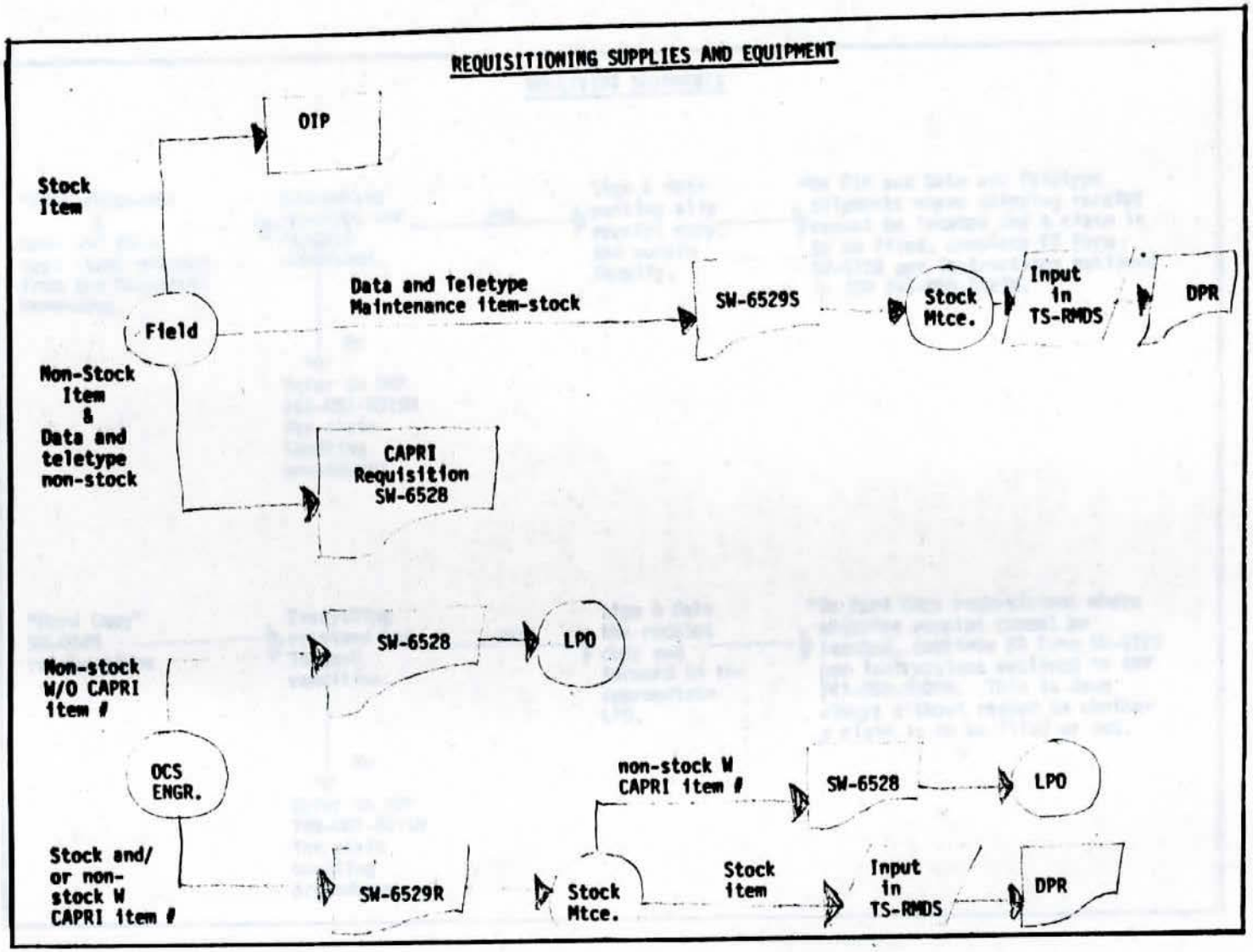
receiving the shipment must prepare FA Form SW-6199, Duplicate Packing Slip Receipt, on all shipments ordered through the LPO, and on shipments involving claims on material received from the Corporate Warehouse.

3.2 Stock Maintenance Responsibilities

3.201 Stock Maintenance has no responsibility in the receipting of supplies.

3.3 Corporate Warehouse Responsibilities

3.301 Materials received in the Corporate Warehouse will be verified by AT&T Technologies, (under contract to Southwestern Bell), against the packing slip and the carrier delivery receipt. After verification, the material will be receipted into TS/RMDS by AT&T Technologies under contract to Southwestern Bell.


REQUISITIONING SUPPLIES AND EQUIPMENT
OIP
Stock Item
Field
Data and Teletype Maintenance item-stock
SW-6529S
Stock Mtce.
Input in TS-RMDS
DPR
Non-Stock Item & Data and teletype non-stock
CAPRI Requisition SW-6528
SW-6528
LPO
Non-stock W/O CAPRI item #
OCS ENGR.
non-stock W CAPRI item #
SW-6528
LPO
Stock and/ or non-stock W CAPRI item #
SW-6529R
Stock Mtce.
Stock item
Input in TS-RMDS
DPR

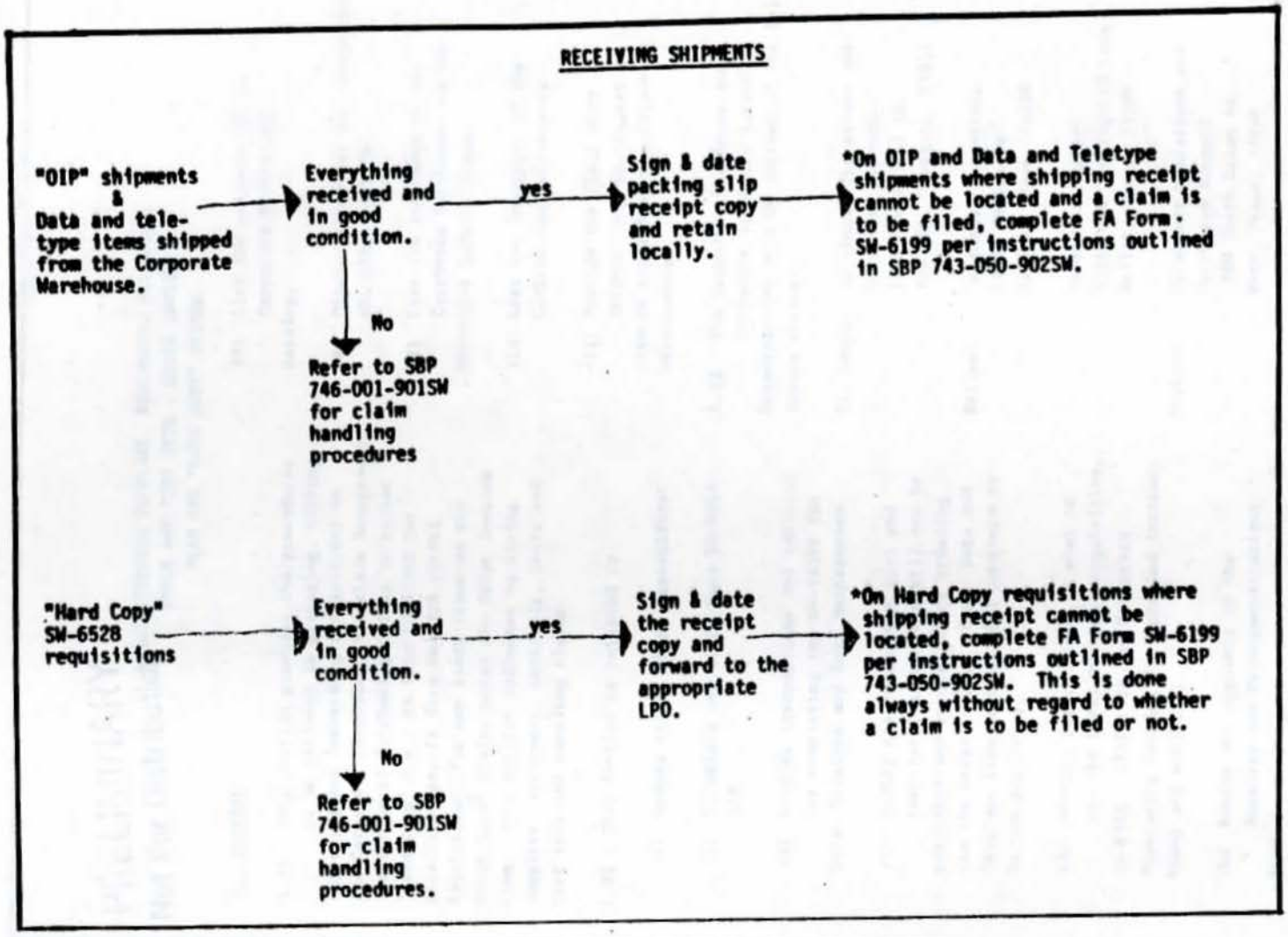

RECEIVING SHIPMENTS
"OIP" shipments & Data and teletype items shipped from the Corporate Warehouse.
Everything received and in good condition.
yes
Sign & date packing slip receipt copy and retain locally.
*On OIP and Data and Teletype shipments where shipping receipt cannot be located and a claim is to be filed, complete FA Form SW-6199 per instructions outlined in SBP 743-050-902SW.
No
Refer to SBP 746-001-901SW for claim handling procedures
"Hard Copy" SW-6528 requisitions
Everything received and in good condition.
yes
Sign & date the receipt copy and forward to the appropriate LPO.
*On Hard Copy requisitions where shipping receipt cannot be located, complete FA Form SW-6199 per instructions outlined in SBP 743-050-902SW. This is done always without regard to whether a claim is to be filed or not.
No
Refer to SBP 746-001-901SW for claim handling procedures.

EXHIBIT O

PRELIMINARY
Not For Distribution

REQUISITIONING SUPPLIES, EQUIPMENT, MATERIALS, TOOLS AND TEST SETS - ORDER INVOICE PLAN AND "HARD COPY" METHOD

1. GENERAL

1.01 This Section provides the procedures to be followed in preparing, editing, approving and forwarding requisitions to the Corporate Warehouse, Materials Management and the Local Purchasing Office by either "hard copy" i.e., FA Form SW-6259S for Data/Teletype, FA Form SW-6528 (CAPRI Requisition) for non stock items or via Touch-Tone® dialer under the Order Invoice Plan. This section addresses receiving supplies, equipment, materials, tools and test sets and handling claims.

1.02 This Section is reissued to:

(1) Update titles after divestiture.

(2) Eliminate use of FA Form SW-6265 A/F.

(3) Provide instructions and exhibits for completing the SW-6259S for Data, Teletype and Data Maintenance.

(4) Notify the field that tool and test set item numbers will now be published and available for ordering via the Order Invoice Plan. Data and Teletype item numbers will continue to be non published.

(5) Provide instructions on when to use the CAPRI Purchase Requisition, SW-6528. (Refer to the Corporate Purchasing Catalog for detailed instructions and exhibits.

(6) Revise the sequence of the Supplies and Telecommunications Products catalog.

(7) List the sequence of the Corporate Purchasing Catalog.

(8) Update procedures for processing shipping receipts.

(9) List the locations of the Corporate Warehouse and the Warehouse Support Group.

(10) List the locations of the CIMS/LV Administrators.

(11) Provide the field with instructions to request an item be stocked at the Corporate Warehouse(s).

1.03 The Corporate Warehouse and Corporate Warehouse Support Organizations will be located in the following cities:

St. Louis- Warehouse Operations and Warehouse Support
1111 Woods Mill Rd.
Ballwin, Missouri 63011

Dallas- Warehouse Operations
11839 Shiloh Rd.
Dallas, Texas 75228

Warehouse Support
5331 East Mockingbird Lane
Dallas, Texas 75206

Houston- Warehouse Operations and Warehouse Support
1800 North Mason Rd.
Katy, Texas 77449

- What are the titles, names, addresses, and telephone numbers of the first, second, third, fourth and fifth level Network managers?

- Identify the Telephone Company Storerooms (TCS) located in each state.

- What are the names, addresses and telephone numbers of the Network technicians and supplies attendants working out of the state Telephone Company Storerooms (TCS)?

- Identify the supplies attendants responsible for assisting the CIMS/LV Area Administrators in taking quarterly inventories.

- Which of the Bell System Practices are being used by Network as a tool to explain the proper handling of the Returned Material Tag and Non-Stocked, Data and Teletype equipment?

Conduct a follow-up review on the Problem Areas of the CIMS/LV System Operation.

In summary, this system analysis has proven that the CIMS/LV System is a viable system that can be used by the company to track its data and teletype equipment.

This system analysis has also proven that the problem areas of the CIMS/LV System Operation are people related problems rather than it being the design of the system.

As a result of this system analysis, each associated work group must band together and do their part in contributing to the success of the CIMS/LV System. The company would more than profit from such efforts and the performance of the system

would speak for itself.

APPENDIX A

INFORMATION FLOW OF THE CIMS/LV OPERATION

- CIMS/LV Service and Equipment Order Flow/Configuration
- CIMS/LV Material and Data Flow via Western Electric
- CIMS/LV Order Flow Diagrams:
  - Installation Order Flow and Corresponding CIMS/LV Commands
  - Installation Flow
  - Disconnect Order Flow and Corresponding CIMS/LV Commands
  - Disconnect Flow - Returned Material Tag Process
  - Disconnect Flow

CIMS/LV SERVICE AND EQUIPMENT ORDERS

Equipment Order Flow/Configuration Continued:

A. EQUIPMENT/USOC CONFIGURATION

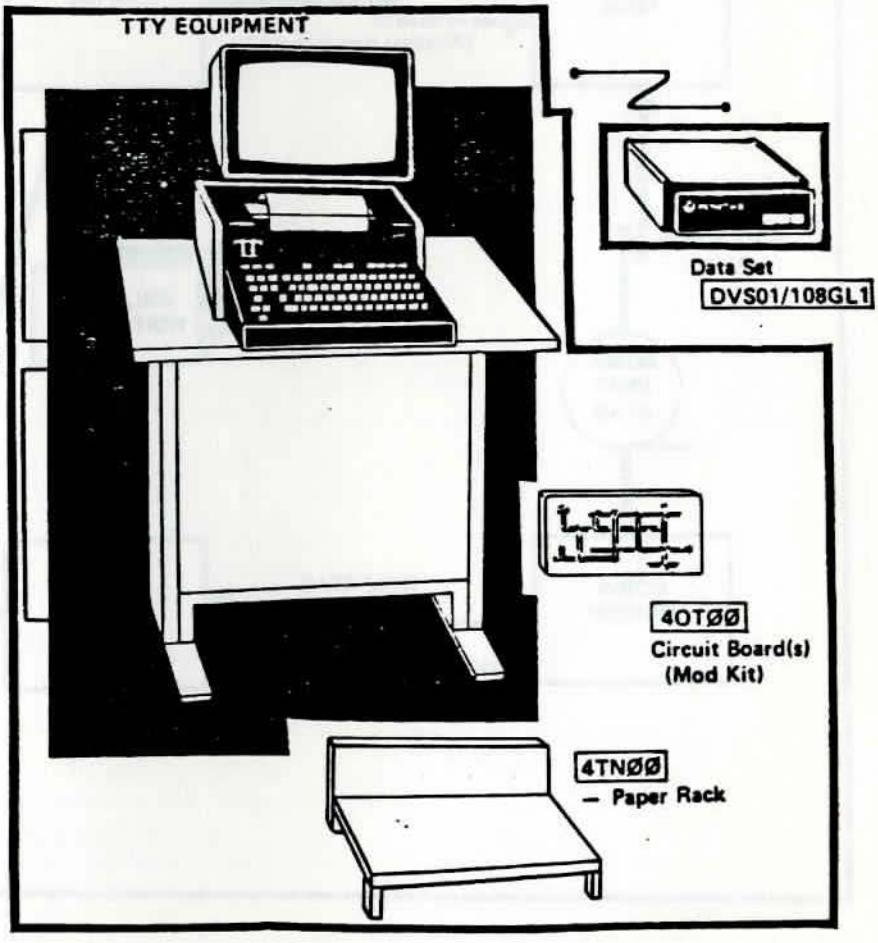
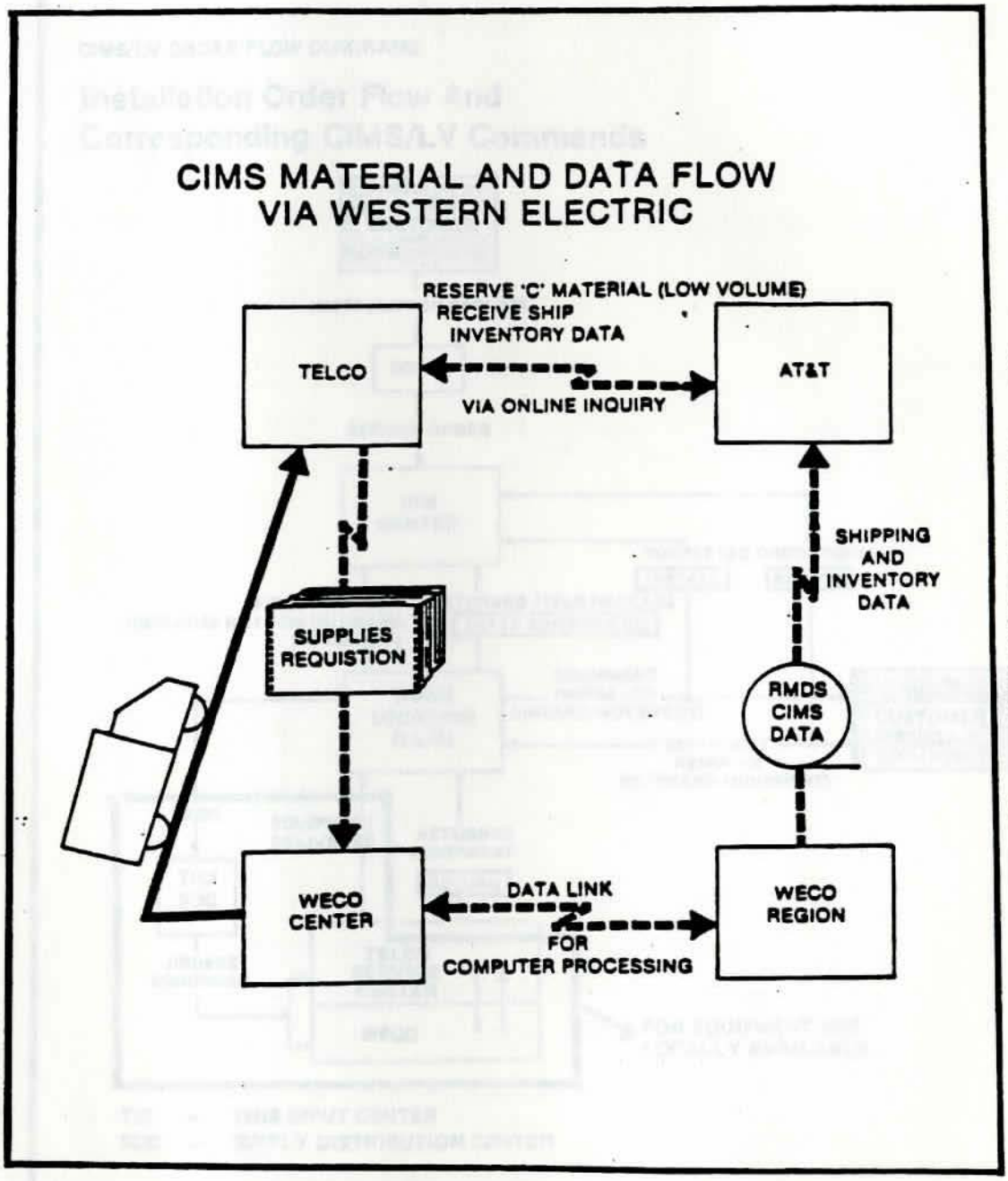
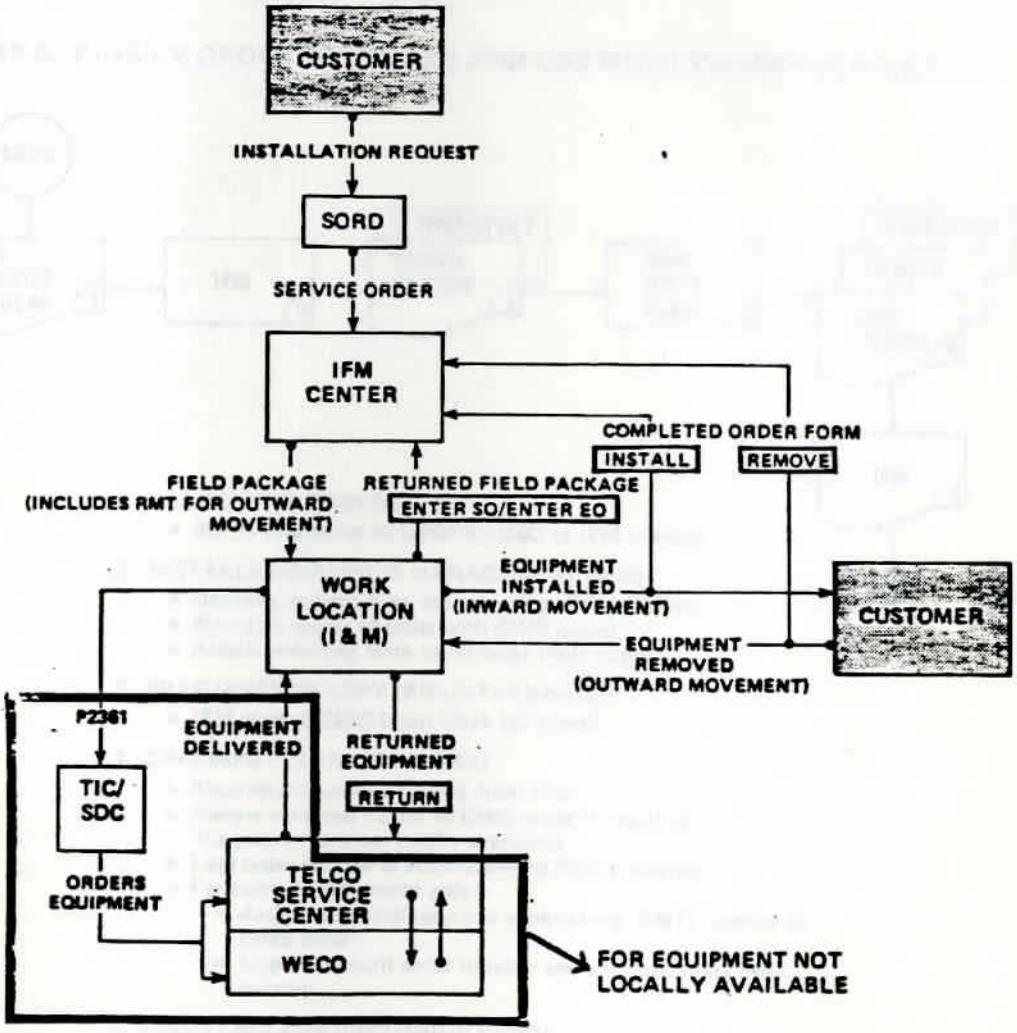


Figure 3.4.1


CIMS MATERIAL AND DATA FLOW
VIA WESTERN ELECTRIC
RESERVE 'C' MATERIAL (LOW VOLUME)
RECEIVE SHIP
INVENTORY DATA
TELCO
AT&T
VIA ONLINE INQUIRY
SHIPPING
AND
INVENTORY
DATA
SUPPLIES
REQUISTION
RMDS
CIMS
DATA
WECO
CENTER
DATA LINK
FOR
COMPUTER PROCESSING
WECO
REGION

CIMS/LV ORDER FLOW DIAGRAMS

Installation Order Flow And Corresponding CIMS/LV Commands

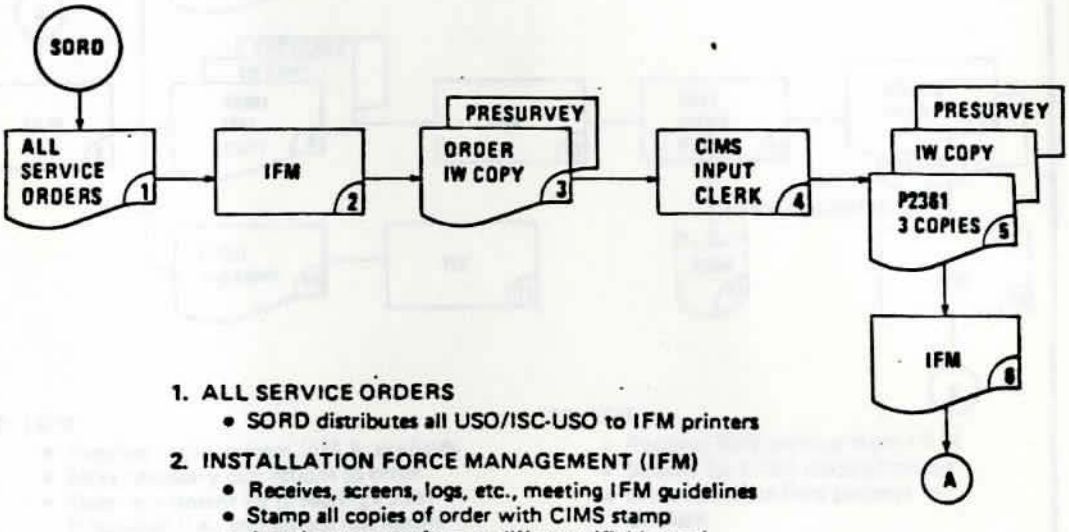


TIC – TWIS INPUT CENTER
SDC – SUPPLY DISTRIBUTION CENTER

CIMS/LV ORDER FLOW DIAGRAMS

Installation Flow

STEP A. CIMS/LV ORDER SCREENING AND USO WORK FOLDER PREPARATION

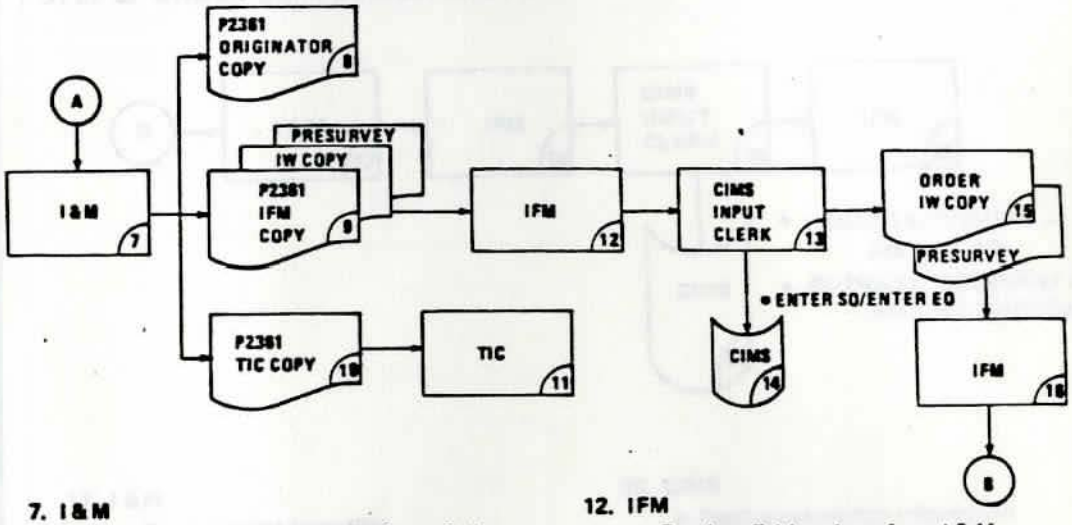


1. ALL SERVICE ORDERS
   - SORD distributes all USO/ISC-USO to IFM printers
2. INSTALLATION FORCE MANAGEMENT (IFM)
   - Receives, screens, logs, etc., meeting IFM guidelines
   - Stamp all copies of order with CIMS stamp
   - Attach presurvey form to IW copy (field copy)
3. PRESURVEY/IW COPY (FIELD PACKAGE)
   - IFM gives to CIMS Input Clerk (CI Clerk)
4. CIMS INPUT CLERK (CI CLERK)
   - Receives presurvey IW copy from IFM
   - Assigns serialized P2361 to CIMS order if required (i.e., equipment not locally available)
   - Logs order number & accompanying P2361 number
   - For outward movement only:
     - Assigns serialized returned material tag (RMT) number to CIMS order
     - Logs equipment order number and accompanying RMT number
5. FIELD PACKAGE (INCLUDING P2361)
   - CI Clerk gives to IFM
6. IFM
   - Routes to I & M for prefielding

CIMS/LV ORDER FLOW DIAGRAMS

Installation Flow (Continued)

STEP B. PRESURVEY AND MATERIAL ORDER PROCESS



7. I & M
- Receives package from IFM & prefields
- Make necessary corrections to order
- Order equipment by preparing P2361 if required (i.e., equipment not locally available)

8. P2361 (ORIGINATOR COPY)
- Supervisor (supply person) retains

9. FIELD PACKAGE
- Return to IFM

10. P2361 (TIC COPY)
- Send to TWIS Input Center (TIC)

11. TIC
- Responsible for ordering equipment from WECO

12. IFM
- Receives field package from I & M
- Screens for CIMS stamped orders
- Gives complete field package to CI Clerk

13. CIMS INPUT CLERK (CI CLERK)
- Receives field package from IFM
- Removes P2361
- Input all CIMS information to computer (ENTER SO/ENTER EO)
- Update CIMS log

14. CIMS
- Receives all pre-completion CIMS information

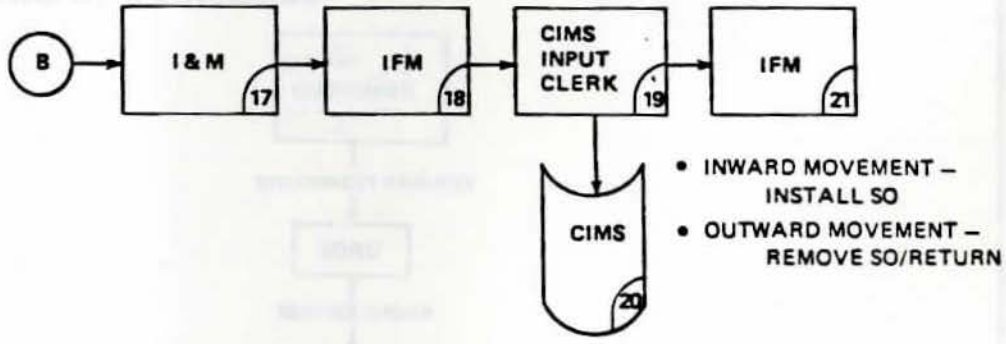
15. IW & PRESURVEY
- CI Clerk gives to IFM

16. IFM
- Receives IW & Presurvey from CI Clerk
- Route order to I & M for completion

CIMS/LV ORDER FLOW DIAGRAMS

Installation Flow (Continued)

STEP C. ORDER COMPLETION PROCESS



17. I & M

- Receives order from IFM
- Completes to PCO/SOC/IFM
- Returns order to IFM

18. IFM

- Receives all completed orders from I & M
- Screens for CIMS stamped order
- Gives completed order to CI Clerk

19. CIMS INPUT CLERK (CI CLERK)

- Receives CIMS completed order from IFM
- Inputs all CIMS completion information to computer:
  - Inward Movement
    - INSTALL SO Command
  - Outward Movement
    - REMOVE SO Command
    - RETURN Command if equipment is to be returned returned to WECO
- Close out CIMS log
- Give completed order to IFM

20. CIMS

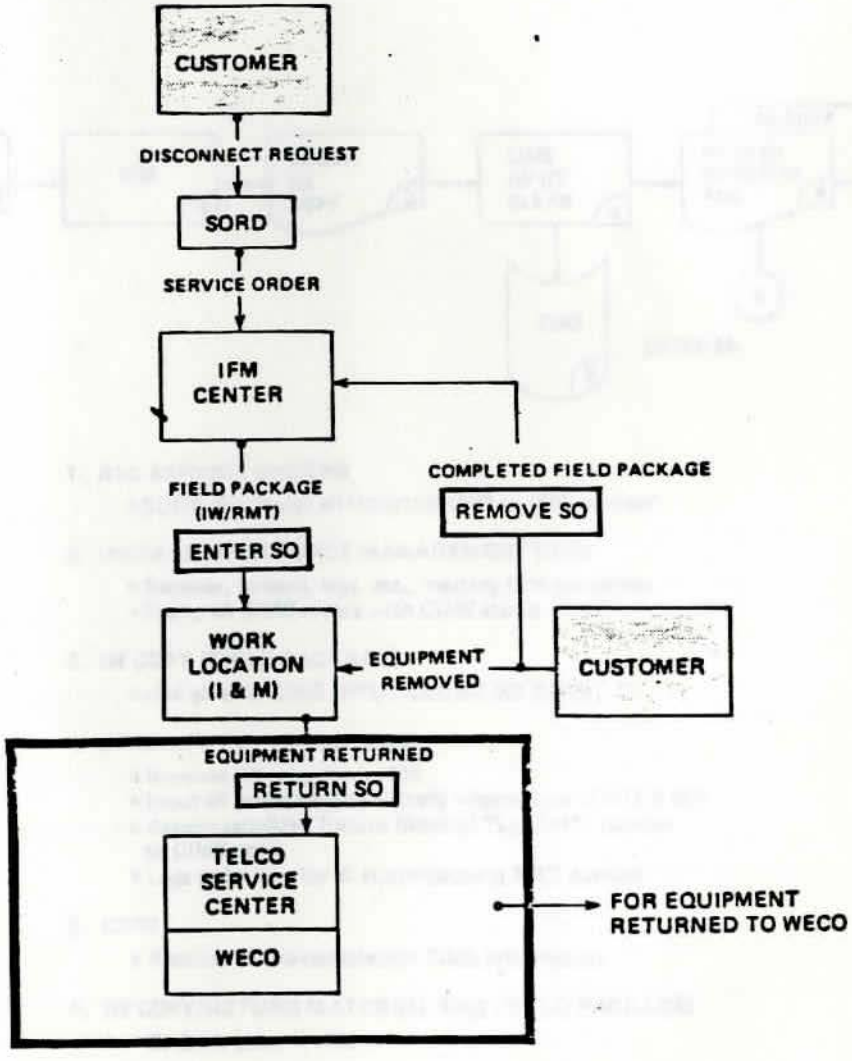
- Receive completion information
- Stores CIMS information
- Provides CIMS reports – ongoing

21. IFM

- Receives completed order from CI Clerk
- Retain completed order meeting IFM guidelines

CIMS/LV ORDER FLOW DIAGRAMS

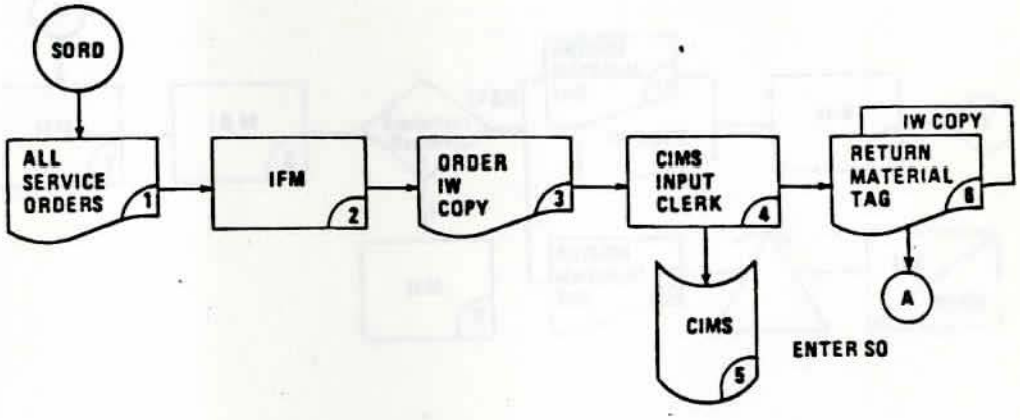
Disconnect Order Flow And Corresponding CIMS/LV Commands



CIMS/LV ORDER FLOW DIAGRAMS

Disconnect Flow — Return Material Tag Process

STEP A. CIMS/LV ORDER SCREENING AND WORK FOLDER PREPARATION

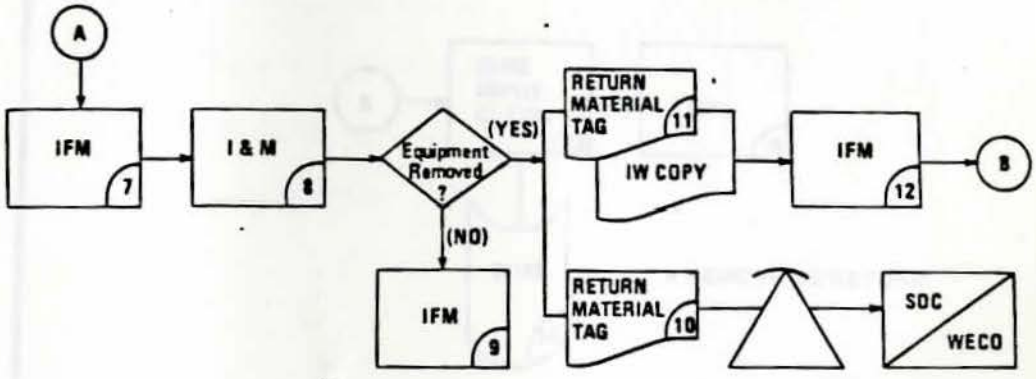


1. ALL SERVICE ORDERS
   - SORD distributes all USO/ISC-USO to IFM printers
2. INSTALLATION FORCE MANAGEMENT (IFM)
   - Receives, screens, logs, etc., meeting IFM guidelines
   - Stamp all CIMS orders with CIMS stamp
3. IW COPY (FIELD PACKAGE)
   - IFM gives to CIMS INPUT CLERK (CI Clerk)
4. CIMS INPUT CLERK (CI Clerk)
   - Receives IW copy from IFM
   - Input all pre-completion CIMS information (ENTER SO)
   - Assigns serialized Return Material Tag (RMT) number to CIMS order
   - Logs order number & accompanying RMT number
5. CIMS
   - Receives all pre-completion CIMS information
6. IW COPY/RETURN MATERIAL TAG (FIELD PACKAGE)
   - CI Clerk gives to IFM

CIMS/LV ORDER FLOW DIAGRAMS

Disconnect Flow (Continued)

STEP B. EQUIPMENT REMOVAL AND RETURN PROCESS



7. IFM

- Receives IW/RMT from CI Clerk
- Route field package to I&M for completion

8. I & M

- Receives IW/RMT from IFM
- Equipment not removed—Return to IFM—See 9
- Equipment removed—See 10 & 11

9. IFM

- Receives uncompleted field package from I&M
- Reschedules at later date (if completed, See 10 & 11)

10. RETURN MATERIAL TAG (RMT)

- I&M prepares RMT
- Attach "HARD" copy to returnable equipment
- Equipment returned to Secondary Distribution Center (SDC) and processed to W. E. Company

11. RMT/IW COPY

- Prepared RMT and completed order returned to IFM
- I&M retains copy of RMT, if applicable

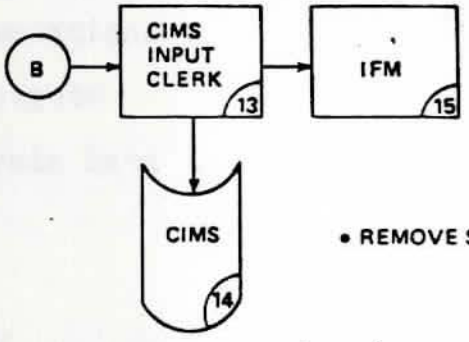
12. IFM

- Receives field package from I&M
- Screens for CIMS stamped orders
- Gives complete field package to CI Clerk

CIMS/LV ORDER FLOW DIAGRAMS

Disconnect Flow (Continued)

STEP C. ORDER COMPLETION PROCESS



- REMOVE SO/RETURN

13. CI CLERK

- Receives field package from IFM
- Removes RMT
- Input all completion information
  Remove SO
- RETURN command if equipment is to be returned to WECO
- Close out CIMS log
- Gives completed order to IFM

14. CIMS

- Receive completion information
- Stores CIMS information
- Provides CIMS reports – Ongoing

15. IFM

- Receives completed order from CI Clerk
- Retain completed order meeting IFM guidelines

APPENDIX B

INPUTS/OUTPUTS OF THE CIMS/LV OPERATION

- Structure Initialization Data
- Initial Inventory Data
- Service and Movement Data
- WECO Service Center Data
- Automatic Recommendations
- Current Status Outputs
- Summary and Analysis Data

STRUCTURE INITIALIZATION DATA
(OTC)

USERS
- NAMES, CAPABILITIES, PASSWORDS
- ASSOCIATED AREAS

LOCATIONS
- SERVICE CENTER(S)
- "WORK LOCATIONS"
- CENTRAL STOCKING LOCATIONS

AREAS
- ADMINISTRATION
- INVENTORY SEARCHES
- REPORT GENERATION & DISTRIBUTION

NETWORKS
- PRIMARY LOCATIONS
- SECONDARY LOCATIONS

USOCS/EQUIPMENT
- OTC USOCS/EQUIPMENT RELATIONSHIPS
- EQUIPMENT PARAMETERS

INITIAL INVENTORY DATA
(OTC)

. IN SERVICE INVENTORY (OFFL, COMM)
  - BY WORK LOCATION
  - BY EQUIPMENT CODE

. FIELD STOCK INVENTORY
  - TOTAL SPARE (MAINTENANCE & INSTALLATION)
  - BY WORK LOCATION
  - BY EQUIPMENT CODE

. PENDING ORDER FILE
  - OUTSTANDING SERVICE ORDERS
  - OUTSTANDING REQUISITIONS

SERVICE AND MOVEMENT DATA
(OTC)

. SERVICE ORDERS (CONNECTS AND DISCONNECTS)

. MAINTENANCE ORDERS

. MAINTENANCE REPLACEMENTS

. RETURNS TO SERVICE CENTER

. REPAIR AUTHORIZATIONS (OPTIONAL)

WECO SERVICE CENTER DATA
(MECHANIZED)

. DAILY INFORMATION
  - SHIPMENTS FROM SERVICE CENTER
  - DIRECT SHIPMENTS FROM MMC OR FACTORY
  - REPAIRED "C" STOCK BALANCE
  - UNREPAIRED "C" STOCK BALANCE

. WEEKLY INFORMATION
  - REPAIRED "C" RETURNS
  - UNREPAIRED "C" RETURNS
  - AM RETURNS (CREDIT)
  - DOCK JUNKS
  - JUNKS FROM REPAIRED "C"
  - JUNKS FROM UNREPAIRED "C"
  - "C" AX SALES (REPAIRED; UNREPAIRED)
  - "C" AX PURCHASES (REPAIRED; UNREPAIRED)

AUTOMATIC RECOMMENDATIONS

. MAINTENANCE STOCK RECOMMENDATION
  - STOCK LEVEL RECOMMENDATION QUANTITY BY EQUIPMENT GROUP AND STOCKING LOCATION
  - INWARD/OUTWARD MOVEMENT
  - IN SERVICE QUANTITIES
  - SMOOTHED FAILURE RATE STATISTICS

. REPAIR AUTHORIZATION SCHEDULING
  - REPAIR PRIORITY LIST
  - REPAIR AUTHORIZATION SCHEDULE

CURRENT STATUS OUTPUTS
(ON-LINE)

. ORGANIZATION STRUCTURE

. USOC AND EQUIPMENT DATA
  - VARIOUS PARAMETERS
  - USOC/EQUIPMENT RELATIONSHIPS

. INVENTORY QUANTITIES
  - BY USOC/EQUIPMENT
  - BY LOCATION/AREA
  - BY SERVICE CENTER

. MOVEMENT CONTENT AND STATUS
  - SERVICE ORDER STATUS AND CONTENT
  - RETURN STATUS AND CONTENT
  - REPAIR STATUS AND CONTENT
  - OUTSTANDING SERVICE ORDERS

SUMMARY AND ANALYSIS DATA
(MONTHLY)

. AUTOMATICALLY GENERATED
  - EXECUTIVE INVENTORY REPORT
  - PURGED ORDER LISTING
  - MAINTENANCE STOCK RECOMMENDATION REPORT

. OPTIONAL (REQUESTED BY OTC)
  - OVERVIEW INVENTORY REPORT
  - INVENTORY ANALYSIS REPORT
  - LOCAL INVENTORY ANALYSIS REPORT
  - LOCAL SERVICE INVENTORY REPORT
  - DISCONNECT AWAITING REMOVAL REPORT

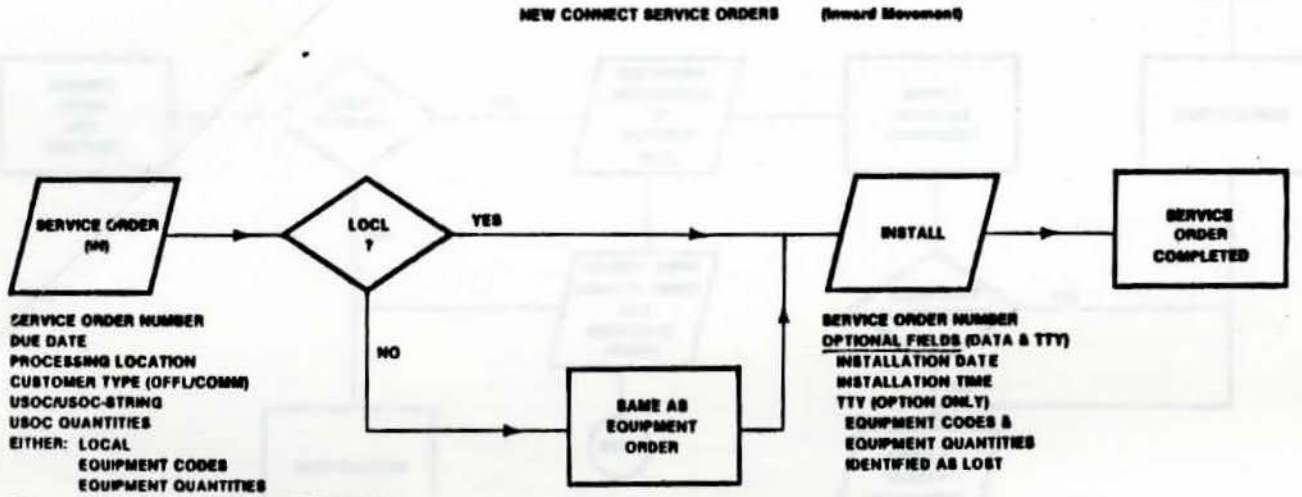
. VARIOUS REPAIR PERFORMANCE REPORTS
  (OPTIONAL)

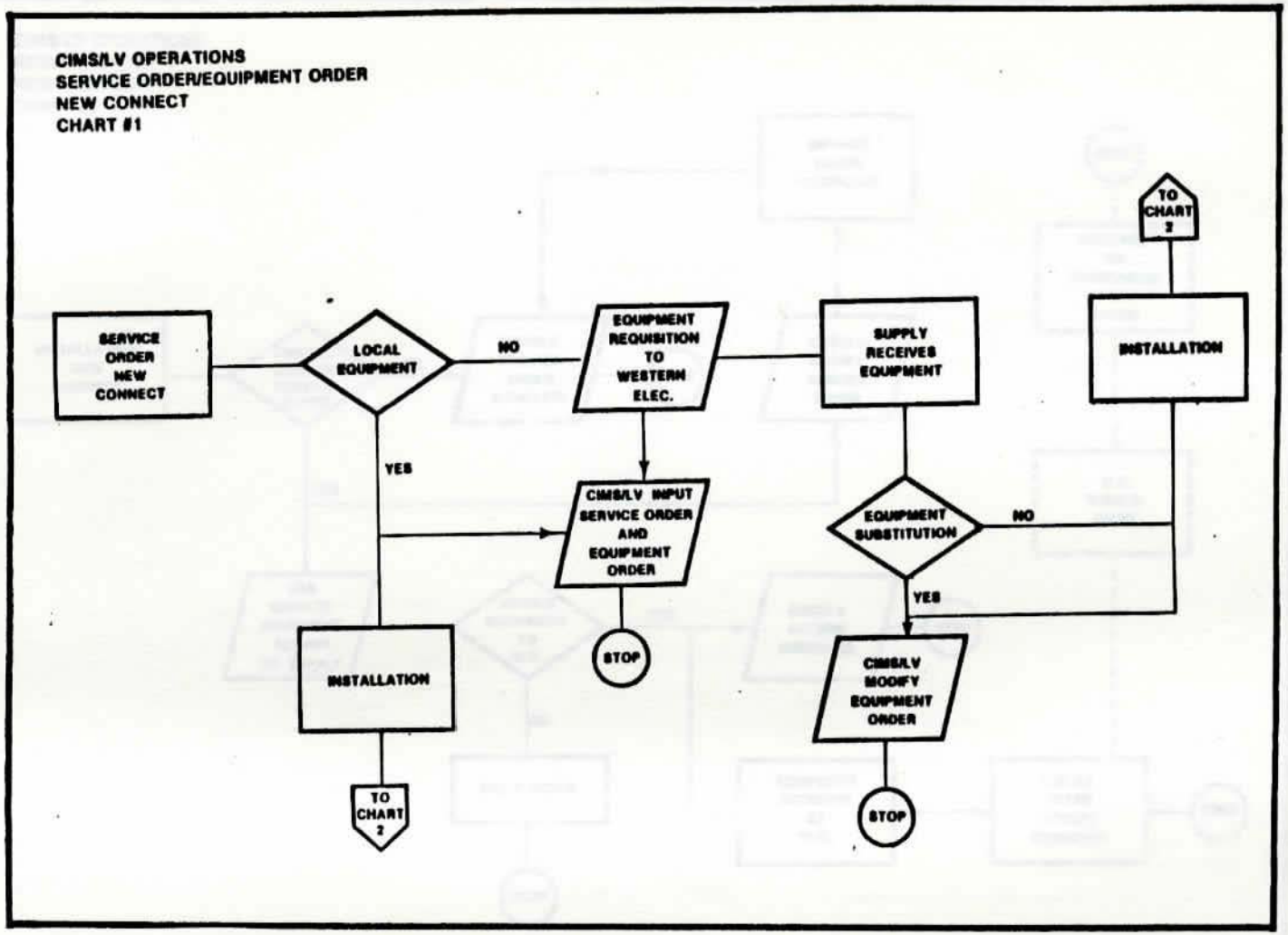
APPENDIX C

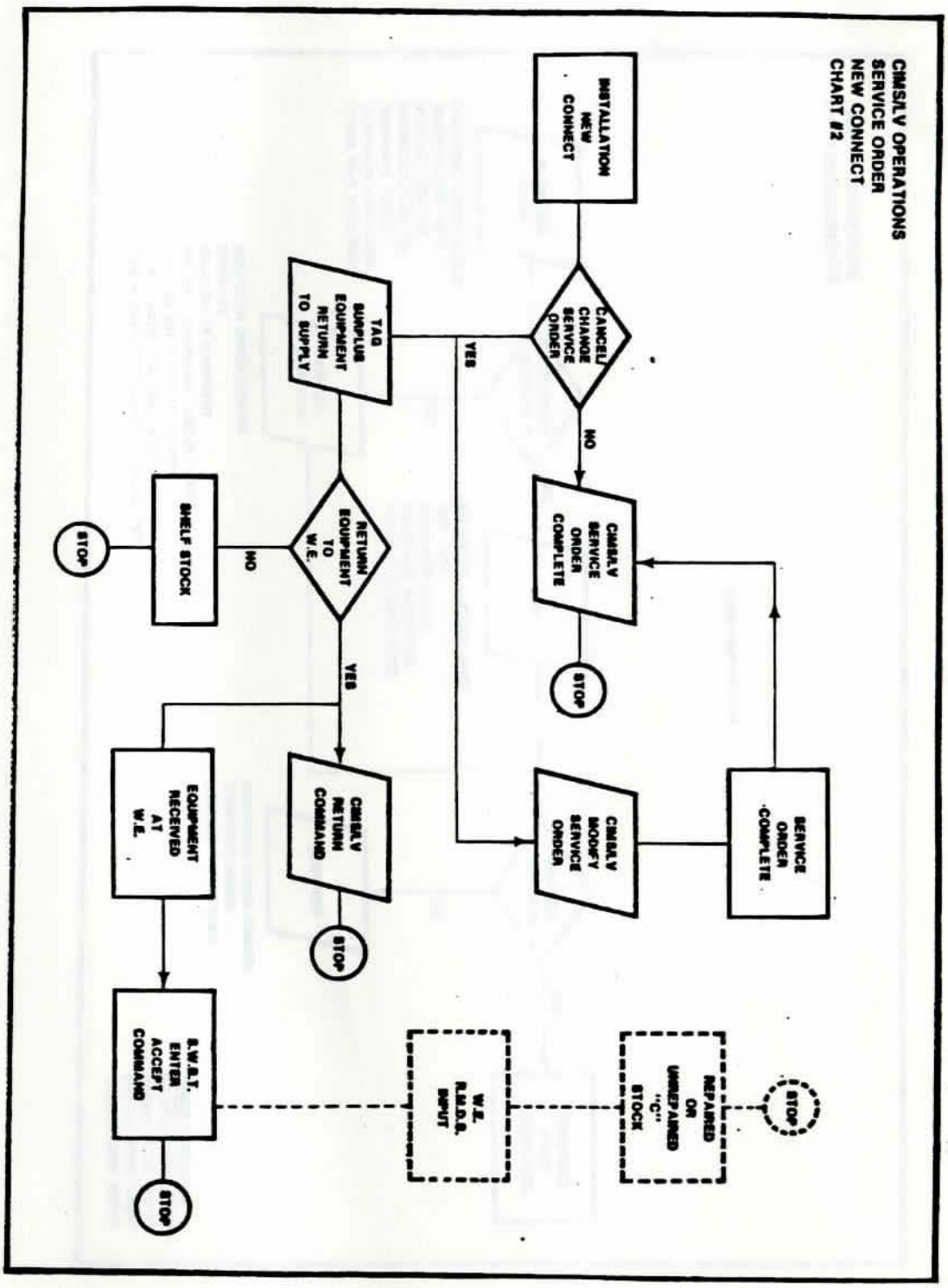
INPUT CONTROL POINTS OF THE CIMS/LV OPERATION

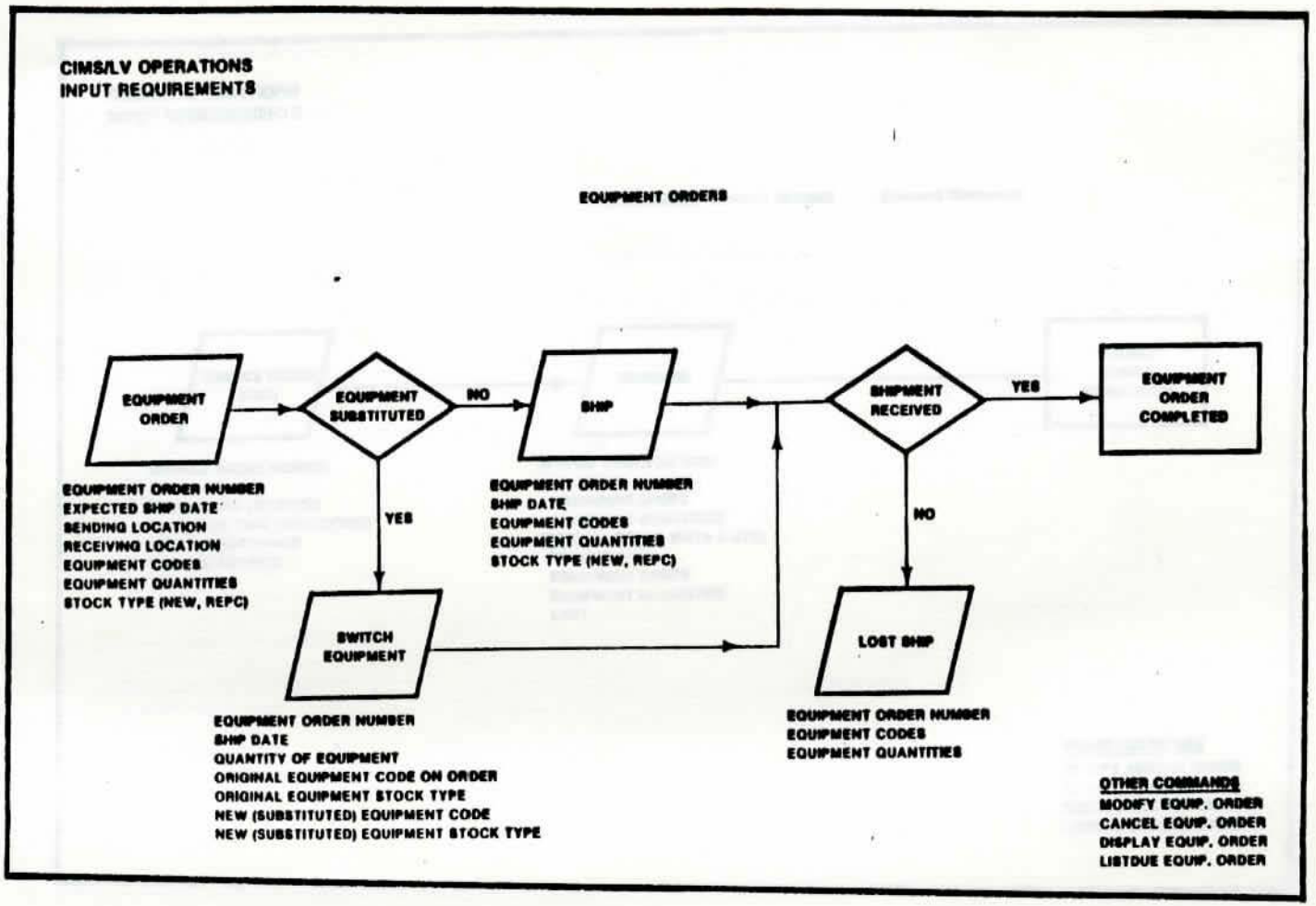
- Input Requirements:
  - Service Order/Equipment Order New Connect
  - Service Order New Connect
  - Equipment Orders
  - Disconnect Service Orders
  - Returns
  - Transfers
  - Maintenance Replacements
  - Service Order Disconnect and Equipment Return to Western Electric
  - Maintenance Replacement and Equipment Return to Western Electric

CIMS/LV OPERATIONS
INPUT REQUIREMENTS



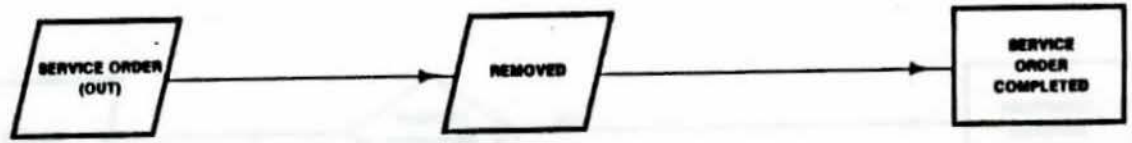

CIMS/LV OPERATIONS
SERVICE ORDER/EQUIPMENT ORDER
NEW CONNECT
CHART #1
SERVICE ORDER NEW CONNECT
LOCAL EQUIPMENT
NO
YES
EQUIPMENT REQUISITION TO WESTERN ELEC.
CIMS/LV INPUT SERVICE ORDER AND EQUIPMENT ORDER
STOP
INSTALLATION
TO CHART 2
SUPPLY RECEIVES EQUIPMENT
EQUIPMENT SUBSTITUTION
NO
YES
CIMS/LV MODIFY EQUIPMENT ORDER
STOP
TO CHART 2
INSTALLATION


CIMS/LV OPERATIONS
SERVICE ORDER
NEW CONNECT
CHART #2
INSTALLATION NEW CONNECT
CANCEL CHANGE SERVICE ORDER
YES
NO
TAG SURPLUS EQUIPMENT RETURN TO SUPPLY
CIMS/LV SERVICE ORDER COMPLETE
STOP
CIMS/LV MODIFY SERVICE ORDER
SERVICE ORDER COMPLETE
RETURN EQUIPMENT TO W.E.
NO
SHELF STOCK
STOP
YES
CIMS/LV RETURN COMMAND
STOP
EQUIPMENT RECEIVED AT W.E.
S.W.B.T. ENTER ACCEPT COMMAND
STOP
STOP
REPAIRED OR UNREPAIRED "C" STOCK
W.E. R.M.D.R. INPUT


CIMS/LV OPERATIONS
INPUT REQUIREMENTS
EQUIPMENT ORDERS
EQUIPMENT ORDER
EQUIPMENT ORDER NUMBER
EXPECTED SHIP DATE
SENDING LOCATION
RECEIVING LOCATION
EQUIPMENT CODES
EQUIPMENT QUANTITIES
STOCK TYPE (NEW, REPC)
EQUIPMENT SUBSTITUTED
NO
YES
SHIP
EQUIPMENT ORDER NUMBER
SHIP DATE
EQUIPMENT CODES
EQUIPMENT QUANTITIES
STOCK TYPE (NEW, REPC)
SHIPMENT RECEIVED
YES
NO
EQUIPMENT ORDER COMPLETED
SWITCH EQUIPMENT
EQUIPMENT ORDER NUMBER
SHIP DATE
QUANTITY OF EQUIPMENT
ORIGINAL EQUIPMENT CODE ON ORDER
ORIGINAL EQUIPMENT STOCK TYPE
NEW (SUBSTITUTED) EQUIPMENT CODE
NEW (SUBSTITUTED) EQUIPMENT STOCK TYPE
LOST SHIP
EQUIPMENT ORDER NUMBER
EQUIPMENT CODES
EQUIPMENT QUANTITIES
OTHER COMMANDS
MODIFY EQUIP. ORDER
CANCEL EQUIP. ORDER
DISPLAY EQUIP. ORDER
LISTDUE EQUIP. ORDER

CIMS/LV OPERATIONS
INPUT REQUIREMENTS

DISCONNECT SERVICE ORDERS **(Outward Movement)**

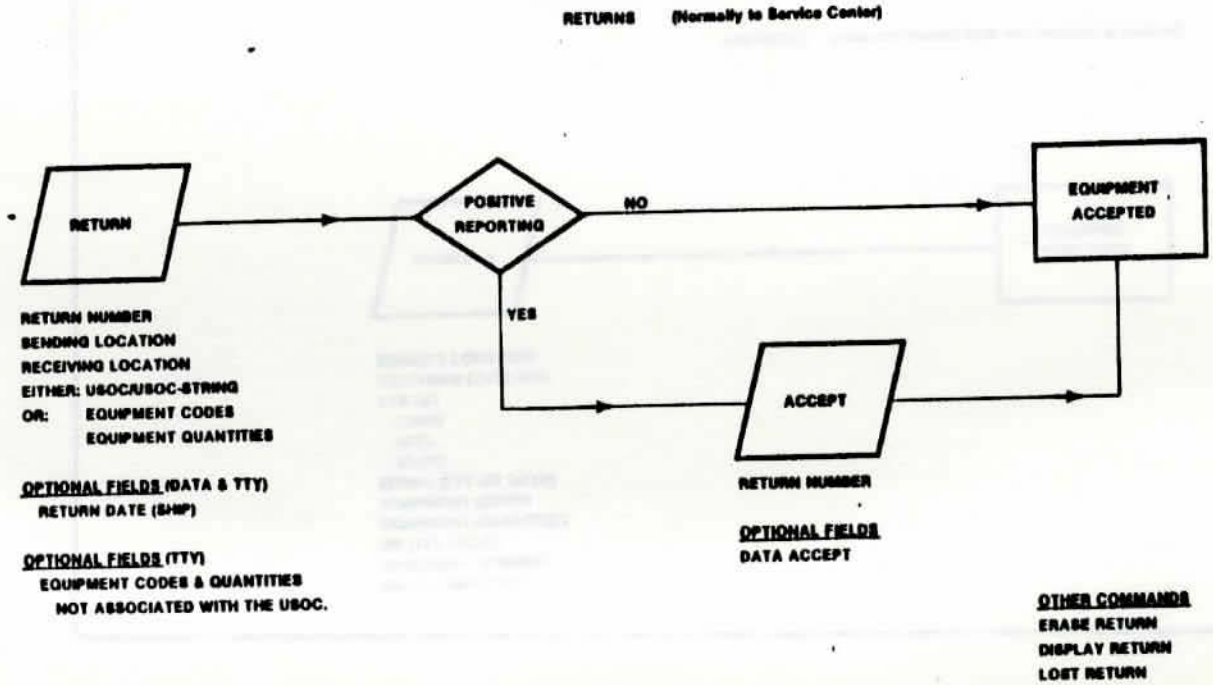


SERVICE ORDER NUMBER
DUE DATE
PROCESSING LOCATION
CUSTOMER TYPE (OFFL/COMM)
USOC/USOC-STRINGS
USOC QUANTITIES

SERVICE ORDER NUMBER
DATA (ONLY)
EQUIPMENT CODES
EQUIPMENT QUANTITIES
OPTIONAL FIELDS (DATA & TTY)
REMOVE DATE
EQUIPMENT CODES
EQUIPMENT QUANTITIES
LOST

OTHER COMMANDS
MODIFY SERVICE ORDER
CANCEL SERVICE ORDER
DISPLAY SERVICE ORDER
LISTDUE SERVICE ORDER

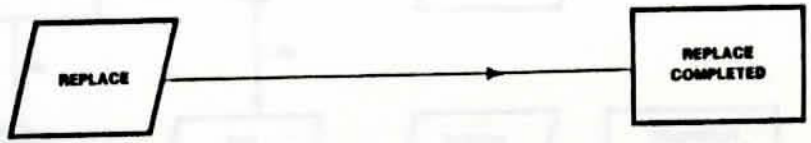
CIMS/LV OPERATIONS
INPUT REQUIREMENTS



CIMS/LV OPERATIONS
INPUT REQUIREMENTS
TRANSFER (move equipment from one location to another)
TRANSFER
TRANSFER COMPLETED
SENDING LOCATION
RECEIVING LOCATION
STATUS
COMM
OFFL
SPARE
EITHER (TTY OR DATA)
EQUIPMENT CODES
EQUIPMENT QUANTITIES
OR (TTY ONLY)
USOC/USOC STRINGS
USOC QUANTITIES

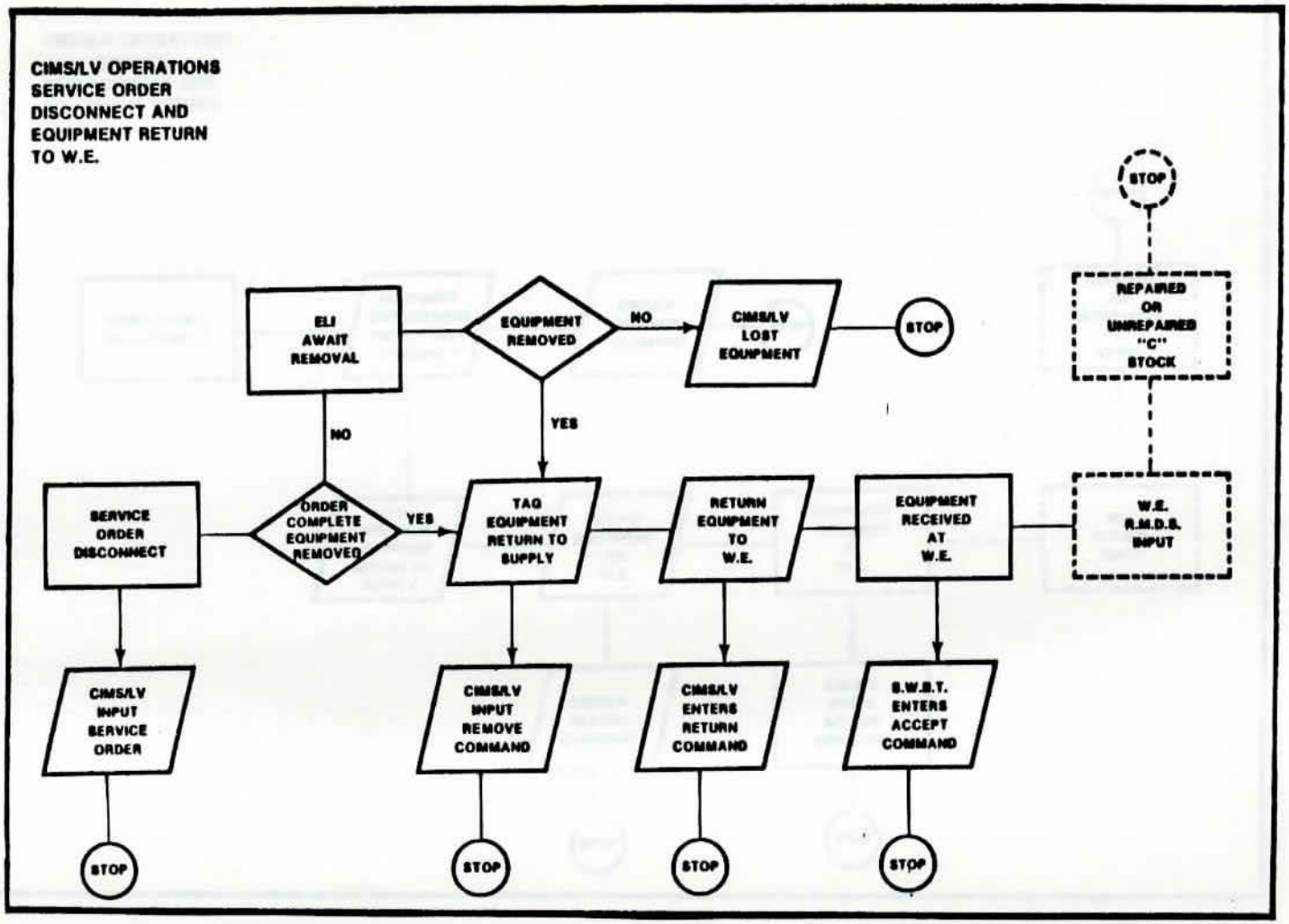
CIMS/LV OPERATIONS
INPUT REQUIREMENTS

MAINTENANCE REPLACEMENTS



REPLACEMENT REPORT NUMBER
PROCESSING LOCATION
CUSTOMER TYPE (OFFL/COMM)
VISIT REASON (PRETEST, INST, MAINT)
CLEARANCE TIME
FAILED EQUIPMENT CODES
EITHER: SAME
OR: REPLACING EQUIPMENT CODE(S)
- EQUIPMENT SET OR PARTS SWAPPED
OPTIONAL FIELDS
REPLACEMENT DATE

OTHER COMMANDS
ERASE REPLACE
DISPLAY REPLACE


CIMS/LV OPERATIONS
SERVICE ORDER
DISCONNECT AND
EQUIPMENT RETURN
TO W.E.
ELI
AWAIT
REMOVAL
EQUIPMENT
REMOVED
NO
CIMS/LV
LOST
EQUIPMENT
STOP
STOP
REPAIRED
OR
UNREPAIRED
"C"
STOCK
YES
NO
SERVICE
ORDER
DISCONNECT
ORDER
COMPLETE
EQUIPMENT
REMOVED
YES
TAQ
EQUIPMENT
RETURN TO
SUPPLY
RETURN
EQUIPMENT
TO
W.E.
EQUIPMENT
RECEIVED
AT
W.E.
W.E.
R.M.D.S.
INPUT
CIMS/LV
INPUT
SERVICE
ORDER
CIMS/LV
INPUT
REMOVE
COMMAND
CIMS/LV
ENTERS
RETURN
COMMAND
S.W.B.T.
ENTERS
ACCEPT
COMMAND
STOP
STOP
STOP
STOP

CIMS/LV OPERATIONS
MAINTENANCE
REPLACEMENT AND
EQUIPMENT RETURN
TO W.E.
MAINTENANCE REPLACEMENT
EQUIPMENT REPLACEMENT NOTICE SENT TO CIMS/LV
CIMS/LV REPLACE COMMAND
STOP
STOP
REPAIRED OR UNREPAIRED "C" STOCK
TAG DEFECTIVE EQUIPMENT RETURN TO SUPPLY
RETURN EQUIPMENT TO W.E.
EQUIPMENT RECEIVED AT W.E.
W.E. R.M.D.S. INPUT
CIMS/LV RETURN COMMAND
S.W.B.T. ENTER ACCEPT COMMAND
STOP
STOP

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