AUTOMAT ION OF HARDWARE INVENTORY OF PAKISTAN REVENUE AUTOMATION (Pvt.) LTD. ISLAMABAD

Undertaken By
Syed Tanveer-ul-Hassan
Shahid Luqman

Supervised by:
Mr. Javed Hussain

Submitted in Partial Fulfillment of
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PROJECT IN BRIEF

PROJECT	:	**Automation of Hardware Inventory**
UNDERTAKEN BY	:	**Syed Tanveer-ul-Hassan**
		Shahid Luqman
SUPERVISED BY	:	**Mr. Javed Hussain**
SUBMITTED AS	:	**Project report for Post Graduate Diploma in Computer Science**
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SUBMITTED TO	:	**Computer Centre, Quaid-i-Azam University Islamabad.**

COMPUTER CENTRE
QUAID-I-AZAM UNIVERSITY, ISLAMABAD

FINAL APPROVAL

This is to certify that we have read the dissertation submitted by Syed Tanveer-ul-Hassan and Mr. Shahid Luqman. It is our judgment that this project report (dissertation) is of sufficient standard to warrant its acceptance by the Quaid-i-Azam University, Islamabad for the **POST GRADUATE DIPLOMA IN COMPUTER SCIENCE.**

COMMITTEE

1. **External Examiner** _____

2. Supervisor _____
   Mr. Javed Hussain
   Computer Centre
   Quaid-i-Azam University,
   Islamabad

3. **Director** _____
   Dr. Ghulam Muhammad
   Computer Centre
   Quaid-i-Azam University,
   Islamabad

ABSTRACT

In the process of Islamic Renaissance, it is essential to make full use of the modern technology. Keeping this in view, the decision of Quaid-i-Azam University Islamabad to computerize the Hardware Inventory System of PRAL was a big step ahead. A big machine the AS/400 miniframe was selected for this purpose. IBM's Application System/400 uses a multitasking/multi-user operating environment, the OS/400 operating system. For programming purposes, ILE RPG/400 was used, because running under OS/400 it provides a very user friendly interface, as well as a multilevel security. Many utilities supplied with the OS/400 were also used for creating various file types. For example, DDS, SDA, RLU, DFU, Query Manager/400 etc.. After a careful system study different modules were designed. There after various reports and quires were made using logical, display files. These files were than integrated using user-friendly menu files which provides menu driven displays with ready on line help.

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Innumerable thanks to 'ALLAH ' worthy of all praises who empowered us to complete this project work.

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Syed Tanveer-ul-Hassan
Shahid Luqman

DEDICATION

To our Dear Parents,

Honourable Teachers and all Those

who Encouraged and

Supported us in our studies.

PREFACE

Media and information technologies are of utmost importance in the present era. The remarkable advancement and discoveries in the computer technologies have contributed a lot towards the progress of these two in the past few decades.

This dissertation under consideration deals with the Automation of Hardware Inventory of PRAL, Islamabad. It comprises six chapters. Brief overview of these chapters is as follows:

The first chapter an introduction of the organization and its constituent units, a bird's eye view of the project including the scope of its study with major aims and objectives.

The second chapter deals with a detailed study of activities of the area included in our scope. This chapter also gives description of the existing system, its analysis which includes drawbacks of the existing system.

Third chapter is divided into three parts. The first part gives general introduction to the "Hardware Inventory System" elaborating its importance including steps involved in its preparation. The second part explains designing objectives of the proposed system, while the third part includes description of the proposed system in detail.

The fourth chapter contains discussion on the system design and database design respectively as well as the study of our selected approaches with reasoning among the mentioned topics. This chapter also includes the description of software and its features.

The fifth chapter enlightens the development and the implementation strategies of the system.

The sixth chapter contains the user guide which include the description of the developed system in detail.

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CHAPTER

1

INTRODUCTION

Introduction

[1]1- Introduction to the Organization:

Pakistan Revenue Automation (Pvt.) Ltd. (PRAL) is a computer consultancy company owned by the Government of Pakistan. The main purpose of the company is to enhance the efficiency and effectiveness of the Information Systems prevailing in public and private sectors by applying relevant state-of-the-art technologies related to computer software, hardware and data communication. PRAL is engaged in developing various computer-based applications for CBR and allied revenue collecting agencies. Most of the work being carried out is related to Income Tax, Customs and Central Excise, and re-engineering of procedures/ processes for enhancing the efficiency of the departments. Several commercial projects relating to Karachi Port Trust, World Bank, Islamabad Club etc., are in the pipeline and are under different stages of processing.

PRAL's Vision:

- To introduce and implement all technologies related to computer software, hardware and data communication, which could enhance the efficiency and efficacy of the system.
- To apply relevant state-of-the-art technologies and develop expertise so that, Pakistan in general and PRAL in particular, can be in the forefront of software development.
- To contribute in the economic and scientific progress and realize the potential capabilities within Pakistan.
- To act as a catalyst in transforming and adapting local systems and integrating these to the "Global Electronic Superhighway".

[1] "Proposal for pre qualification of Consultants" Published by PRAL May,1997.

[2]PRAL Internals:

Hardware and Software Facilities:

PRAL has an excellent software development environment that is equipped with a number of modern computing platforms.

Following is a brief description of the hardware and software facilities provided at PRAL:

AS/400 Mini Machine:

PRAL has a mini computing environment with two IBM AS/400 machines having 64 bit 6.1 RPR processors. These minis are attached to 10 ASCII terminals and 6 PC's are emulated to them. Operating system IBM O/S 400 version 3 release 7 is running on these AS/400 machines.

Bull RISC Machines:

Two RISC base Escala Bull machines having Power PC RISC 75 MHz processors are a part of the hardware squad of PRAL. They are connected to 5 ASCII terminals and 10 PC clients. Bull machines run operating system IBM AIX version 4.1.

Network Servers:

Two Gateway two thousand machines with Pentium 100 MHz processors are serving as network servers with:

- Windows NT 4.0
- Sun Solaris

Stand Alone PC's:

Almost 30 stand alone PC's are also a part of the PRAL hardware environment. Most of these PC's are IBM Aptiva machines. These machines run Microsoft Windows 95.

Networking Environment:

[2] "Company Information" Published by PRAL May,1997.

The networking environment of PRAL can be divided in two parts:

a- AS/400 Connected to PC's:

AS/400 machines are only attached to the standalone PC's through IBM Client Access. This communication is being done by the serial communication lines on 9 pin serial port of PC and port 2 of AS/400 using 2609 adapter.

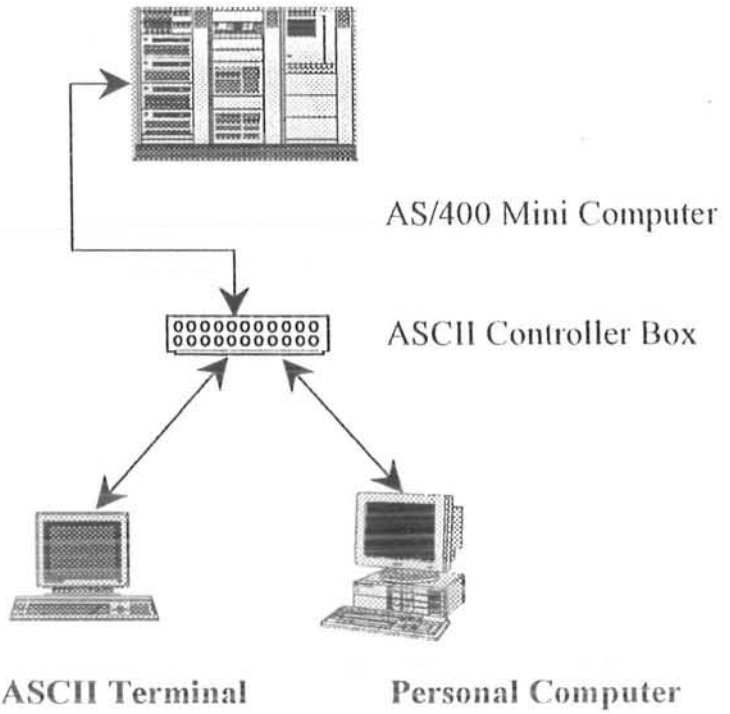


Figure 1.1: AS/400 connected to PC and ASCII Terminal.

b- Bulls Connected to the Gateway 2000 and Standalone PC's:

RISC based Escala Bull machines with IBM AIX, two Gateway 2000 Pentium with Sun Solaris and Windows NT and standalone PC's are attached to each other. This communication is being done by the TCP/IP. All these machines are connected to each other through a hub. Different communication mediums like STP and BNC cables are being in use for communication.

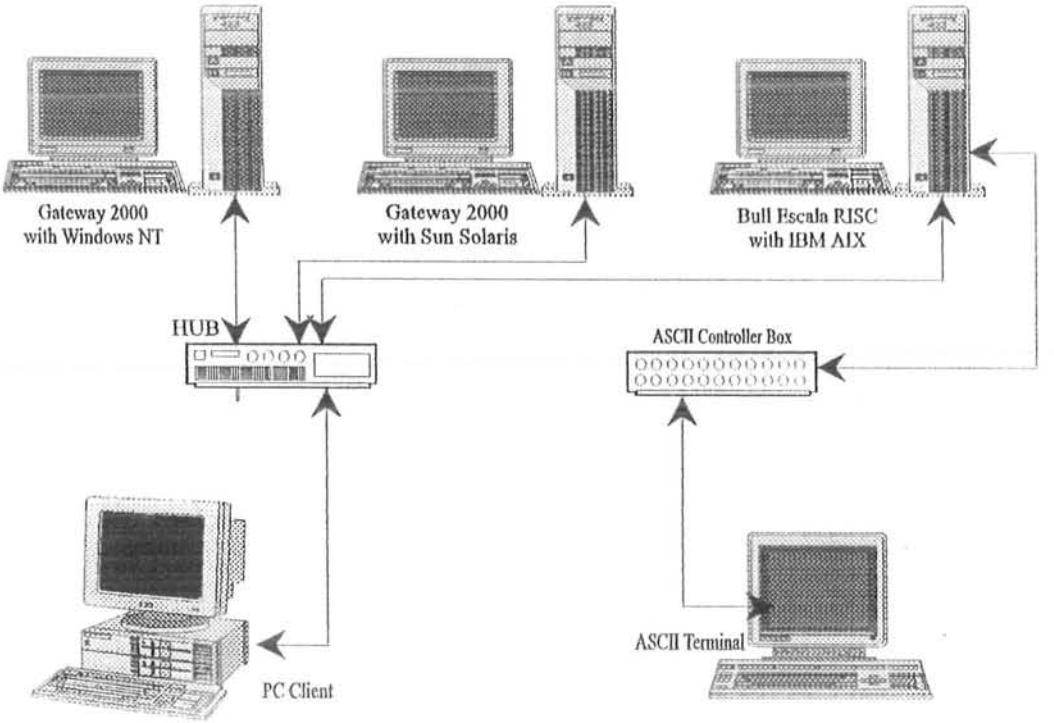


Figure 1.2: Bulls connected to Gateway 2000 and standalone PC's.

CHAPTER

2

EXISTING SYSTEM

EXISTING SYSTEM

2.1 INTRODUCTION

Pakistan Revenue Automation (Pvt.) Limited is a computer consulting company owned by the Govt. of Pakistan. Hardware is indispensable for software solutions. PRAL introduce and implement all technologies related to computer hardware to enhance the efficiency of the system. At any given moment, it has a good stock of computer equipment installed at various locations.

For smooth running of development projects, it is necessary to keep record of the hardware and maintain all types of equipment. Information of each group of items/equipment is taken manually. This process ultimately results in the wastage of time and duplicate data. Also too much space is required to store the record keeping files.

2.2 PROCESS-MAKING ORGANIZATIONS

The hardware inventory process is functioned by two main organizations, which works in collaboration to plan and control the hardware inventory. These two organizations are:

1. CBR
2. PRAL

2.2.1 CENTRAL BOARD OF REVENUE (CBR)

After independence, the Central Board of Revenue was constituted as the Revenue Division and exercised the powers and authority of the Federal Government in the Ministry of Finance, for fiscal policies, changes in duties and taxes, levy and realization of federal revenues, hearing of appeals and revision petitions, tax administration etc., up to 31st, August, 1960. As a result of reorganization the Revenue Division was abolished and the Central Board of Revenue was created as a self-contained Attached Department under the Ministry of Finance with a Board of three Members and Secretary Finance designated as Chairman. Income Tax, Collectorate of Custom and Central Excise, and Sales Tax are the allied departments of CBR for Revenue collection. Board of members takes decisions for all types of functions of CBR. The board also decides the computerization of a certain department.

2.2.2 PAKISTAN REVENUE AUTOMATION (Pvt.) LIMITED

Technical evaluation and installation of hardware inventory is carried out through this organization. The less valued projects are implemented according to the purchasing committee approval. The high valued projects are approved from the board of members of CBR. But taking the board's approval is decided by the purchasing committee.

2.2.2.1 PURCHASING COMMITTEE

General Manager / Chief Executive of PRAL appoints a purchasing committee for technical decisions.

2.3 IMPLEMENTATION PROCESS

Implementation process is descried as:

2.3.1 FEASIBILITY REPORT

A board decision is received for implementation. The Engineering and Maintenance department prepares the feasibility report in view of cost and technology. A purchasing committee approves this feasibility report. If the estimated cost is very higher then report is sent to CBR for board's approval. Otherwise, the committee takes decision for implementation.

2.3.2 TENDERS/FLOATING INQUIRIES

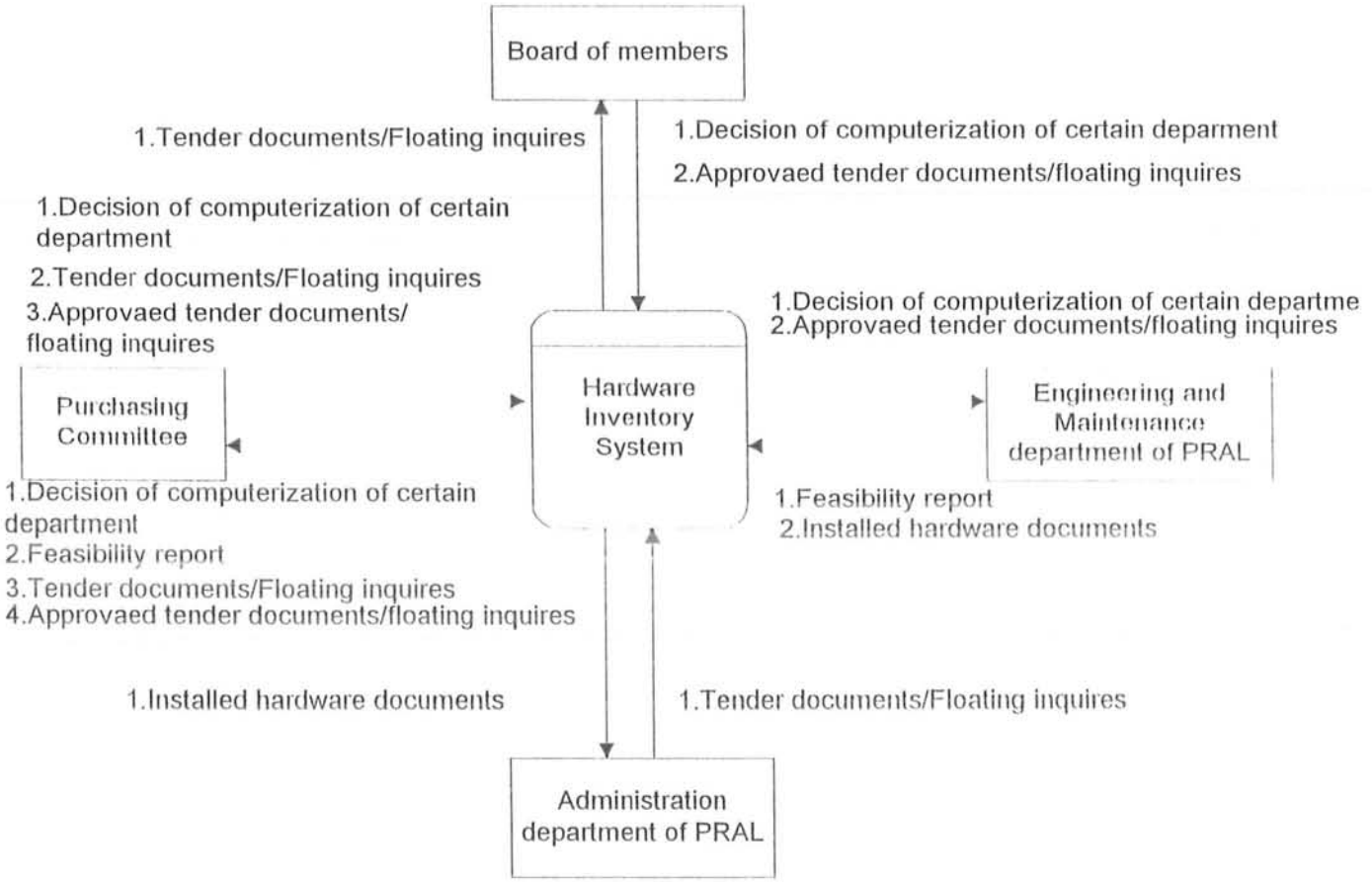
Purchasing committee sends the implementation approval to the Administration department if the estimated cost is less than Rs. 10,000 then quotations are called by floating inquiries on various suppliers. Otherwise, inquiries are published in newspapers and tenders are invited. The quotations/tender documents are presented before the purchasing committee for evaluation. Committee then approves the quotation/tender document after considering all technical and financial aspects.

2.3.3 INSTALLATION

Approved quotations/tender documents consist of specifications of the equipment. Engineering and Maintenance department is responsible for the inspection and installation. After installation, the signs of the receiving officer are taken and the documents are sent to the Administration department.

DATA FLOW ANALYSIS

Context Diagram Of Existing Hardware Inventory System Of PRAL



2.4 PROBLEMS AND DRAWBACKS IN THE EXISTING SYSTEM

Initially in the first phase of the project, the Engineering and Maintenance department of PRAL was asked to specify the main problems faced at present to maintain the inventory activities. Then Administration department was asked to specify the problems. This was done in order to overcome the present problems through computer based procedures.

The major problems identified by the Engineering and Maintenance department and Administration department of PRAL and major drawbacks, which were observed, are as follows:

1. Manual system is quite slow and cumbersome.
2. Storage, retrieval and processing of information are difficult, because all the information is stored in registered or in loose binder files, which are liable to get lost.
3. The Engineering and Maintenance department is under staffed.
4. Calculations are done manually, so there is a great chance of error. In addition to the fact that it requires a lot of laborious work.
5. There is a great danger of the information being destroyed due to fire, theft, transfer etc.
6. It needs too much space to store these records keeping registers and files.
7. The level of redundancy of data is very high.
8. If any department requires any information about the hardware planning, it has to undergo many formalities.
9. Hardware planning is done once in the beginning only whereas for proper control it should be done more often.

10. The present hardware inventory system is unable to fulfill the information requirements of the management at proper time, due to the reason that the volume of data is large and is increasing day by day and retrieval system is slow. It is very difficult to carry out any type of analysis on the available data because manual compilation of reports involves a lot of computations and hence is impractical.

CHAPTER

3

PROPOSED SYSTEM

PROPOSED SYSTEM

3.1 HARDWARE INVENTORY PROCESS versus EDP.

The major objectives in designing phase is to suggest such a system which is organized, smooth in running, proficient in handling information and adequate in all respect. But the point placed before is that the prescribed organizational limitations should not be dominating more over the proposed system should be applicable and should overcome the drawbacks which exist in present system of Hardware Inventory. Computerized system for Engineering and Maintenance department of PRAL is being proposed to meet the requirements of the organization and is designed so that all the objectives must be achieved. Proposed system is designed keeping in mind, the vital capabilities and unlimited areas influenced by electronic computer. The main objective of the proposed system is to recognize the hardware installed at various locations.

The present system does not satisfy all the objectives of the Engineering and Maintenance department and Administration department of PRAL. Typical organizational objectives are survival and achievement of its basic goals and thus yield total system objectives like better services to its users and of course low operating cost. These objectives can only be achieved if computer based system is satisfying the requirements.

3.2 DESIGN OBJECTIVES OF THE PROPOSED SYSTEM

Before designing any computer based system, it is essential and helpful to establish the objectives that a computer based system should satisfy. Besides this the relative importance of each objective should also be

established. Keeping in mind the drawbacks of the existing system, following objectives of the proposed system are made.

EFFICIENCY

Efficiency is defined as the economic utilization of available resources, for achieving a predetermined objective. The proposed system is more efficient than the existing one, for its uses human and financial resources, and still its output is far better in terms of time and appearance, and error free.

DATA SECURITY

Data required for decision making is highly sensitive and valuable. Therefore, reliability of the proposed system is secure by giving a regular and guaranteed service to the user.

RELEVANCE

Information provided to the management will be relevant, since the reports are designed after performing a qualitative information requirement analysis.

TIME FACTOR

The system will produce information in time. Queries and reports can be produced quickly.

ACCURACY

The system will provide accurate information, needed for decision making. It will also ensure efficient and accurate record keeping.

FLEXIBILITY

The system is capable of making changes and enhancements in accordance with future needs of the management.

USER – FRIENDLY

User will communicate with system through simple on-screen dialogues. No specialized computer staff will be required to operate the system, because its menus are self-explanatory and supplemented with on-line help.

PRODUCTIVITY

Significant reduction of manual task will lead too much improved system productivity.

RELIABILITY

The new system will be more reliable than the manual system due to its accurate, secure and timely decision making.

PERFORMANCE

The proposed system should reduce time and efforts require retrieving information. It should have the capability to answer various queries instantly and efficiently.

ECONOMY

All component parts of the system including reports, queries etc. will contribute a benefit at least as great as their cost.

PRIORITY

System will be able to establish priorities for processing so that critical output can be processed on time and other outputs can be processed when time permits.

ACCEPTABILITY

The system will be acceptable to the organization design standards. Such standards are set to ensure that previous objectives are likely to be met.

3.3 PROPOSED SYSTEM DESCRIPTION

The automated hardware inventory system of PRAL has been proposed after careful and detailed study of the existing system.

The proposed system has been described in detail as follows:

3.3.1 ITEMS/EQUIPMENT SPECIFICATION

After completing the installation process the automated system will update the items/equipment specifications database files and location files. Two database files will be used for items/equipment specifications. One file will contain the hardware items/equipment related data and the other file will contain the furniture-related data. Furniture-related data is updated only when furniture items are provided with hardware equipment. The items/equipment specification database file contains the following information:

HARDWARE ITEMS/EQUIPMENT RELATED DATA

Hardware Items/equipment data include main group code, tag no., item/machine code, serial no., model, make, resolution, RAM, UPS/Stabilizer capacity, UPS backup time, processing/printing speed, description, location code, CBR location code, date of delivery, CD status, Fax/Modem card status, backup unit status.

This file includes information about different hardware related equipment like Monitor, Keyboard, UPS, Stabilizer, CPU, Printer, Mouse etc.

Chairs, Tables, and Air conditioner are also given against a set of hardware. So according to the requirement they are also included. Their specifications are given in another database file as below:

3.3.2 FURNITURE-RELATED DATA

This file includes the specifications like main group code, tag no., items/machine code, description, location code, CBR location code, date of delivery.

After the completion of entry making process the user can have the "Details of a particular item/machines" available (Fig. B-4) and "Group wise list of items/machines" available (Fig. B-1).

3.3.3 LOCATION INFORMATION

The important phase of the automated hardware system is location wise information. The hardware is installed either in PRAL Headquarter or at various locations of CBR. Four files will be used for storing location data. These database files are designed after normalization. Before writing/updating the location files computer will check on line validity of location codes in the following order:

Location codes : code for PRAL or CBR

CBR location codes: code for CBR Headquarter, Central Excise, Sales Tax, DRS, collectorate of Custom, Income Tax.

The following four files will be used for location information:

1. PRAL location file
2. CBR Headquarters/Sales Tax /Central Excise/DRS file
3. CBR collectorate file
4. CBR income tax file

1. PRAL LOCATION FILE

This file contains tag number, item/machine code, officer name, designation, office address, city.

After the completion of entry making process the user can have the "location wise list of items" available (Fig B-3).

2. CBR Headquarters/Central Excise/Sales Tax/DRS FILE

This file contains tag number, item/machine code, contact person, room number/section, office address, city.

3. CBR COLLECTORATE of Customs FILE

Before writing/updating the CBR Collectorate of Customs file computer will check on line validity of Collectorate codes.

This file contains tag number, item/machine code, collectorate code, office address, city.

4. CBR COLLECTORATE of Customs FILE

This file contains tag number, item/machine code, region, zone, range, circle, office address, city.

After the completion of entry making process the user can have the "location wise list of items" available (Fig B-2).

3.3.4 VENDER INFORMATION

Vender details are kept for future dealings. There is no need to keep vender information for all items but for warranted hardware, the vender personnel information is kept in vender information database file.

Vender data can be entered into the vender information file at any time.

The contents of vender database file are as follows:

Tag Number	:	Tag number of item allotted by PRAL.
Item/Machine code	:	Item provided by vender.
Vender name	:	Vendor/company name.
Vender person name	:	The name responsible for item.
Title	:	Title/designation of the person
Address	:	Vender address
Telephone #	:	Vender phone number.
E-mail address	:	Vender E-mail address.
Fax #	:	Vender Fax number.

After the completion of entry making process the user can have the "vender report" available (Fig. B-6).

3.3.5 MAINTENANCE CONTRACT INFORMATION

Some items have maintenance contract. Maintenance contract is done either with vendor or with another company. Contract information of each item/equipment is kept in maintenance contract database file.

The contents of maintenance contract file are:

Tag Number	:	Tag number allotted by PRAL
Machine/item code	:	Item for which contract is done
Contract with	:	Company to which contract is done
Type of contract	:	Type of contract done
Date of contract	:	The date from where contract will start
Validation date	:	Ending date of contract
Telephone no.	:	Contractor telephone number
Fax no.	:	Contractor fax number

E-mail address	:	Contractor e-mail address
Address	:	Contractor full address

After completion of entry making process, the user can have the "Maintenance contract report" available (Fig B-5).

CHAPTER

4

SYSTEM DESIGN

SYSTEM DESIGN

4.1 INTRODUCTION

System designing is the most important of all phases in a system's life cycle. System design presents specific information for designing of output, input processing, life structure and databases.

Economy, reliability, responsiveness and modularity are taken in to account while designing. System has been designed on the basis of the proposed system to meet the needs laid down by the hardware section. This chapter deals with designing of the system comprising of designing output forms, input forms, codes and files.

4.1. DESIGN APPROACH

Design method strategies and methodologies are tools for a designer. Since designing a new system is, as a matter of fact a creative work and as much, it is very difficult and describe in detail. It follows that a good designer may employ a design standard but keep on reviewing its effectiveness constantly, and looking for future improvements. The common design methods are:

Top-down design,

Bottom-up design,

Parallel approach,

Critical-first design, and

Structured design approach.

These design methods are studies and compared carefully, so as to determine and select the most suitable one.

4.2.1 TOP-DOWN DESIGN

Top-down design is based on the idea that there are various levels of decision making required, varying from those concerning goals of project and the overall system boundary, down to the detailed level of allocating data to disks and layout of printed reports.

Progressively analyzing higher level functions and breaking them down into more detail is referred to as functional decomposition ; whereas step wise refinement refers to gradually increased precision of a statement. Both of these terms may be considered as specific varieties of top-down development method.

4.2.2 BOTTOM-UP DESIGN

Bottom-up design starts with basic units of system, and form these units the design builds up to a higher level. A system created in this way could be started with the design of input documents and output layouts, eventually arriving at a point where management information system has been built.

This method has a longer history than others. Some authors claim it as better rated than the top-down design. The bottom-up design also tends to produce systems with complex interface between models, because they were not designed be interfaced in the first place.

4.2.3 PARALLEL APPROACH

The parallel approach attempts to minimize disadvantages of bottom-up and top-down designs. Operational information and management information systems are developed and operated independently. As both types evolve and efforts are made to use as much information that can be accessed from operational systems, as input to the management information systems. At the same time, management system is developed to utilize the information available in the operational informational system that have been built. When this approach is followed, consequently two types of systems are will converge and eventually become an information management system.

4.2.4. CRITICAL-FIRST DESIGN APPROACH

Critical-first design is a method of system's design which emphasize the identification of the most critical component within a system. In potential problems, areas can be identified at an early stage and it is possible to try to solve these problems before going on to future design work.

4.2.5 STRUCTURED DESIGN APPROACH

Structured analysis and design is a refinement of top-down method. All principles of the top-down remain valid in structured design. But the structured design add other guidelines to systematize the design process further, and measure the quality of the design.

Designing programs and systems is a decision making process which involves technical decisions. The Structured design enables to make these changes in a systematic way.

4.3 ADOPTED APPROACH

The structured design approach is viewed as top-down approach in addition to new documentation techniques, that is why we have adopted this approach. Main features of the structured design are:

THE STRUCTURED METHODOLOGY:

The structured methodology is based on a building a logical model of the system, i.e. identifying major components of the system , decomposing them, and iterating till the desired level is achieved.

Top-down methods often result in step wise refinement starting from an abstract design at each step the design is refined to a more concrete until we reach a level where no more refinement is possible and the design can be implemented directly.

Pure top-down or pure bottom-up approaches are often not practical. To ensure successfulness of the bottom-up approach, we must have a good notation of the top; while in top-down approach one must have some idea about the feasibility of the components specified during design. This speculation is important to predict results, as and when they arrive.

STRUCTURED TOOLS

Structured design approach is realized through its rich set of analysis and design tools, each of which serves a particular purpose in its developments. These are described as under:

DATA-FLOW DIAGRAMS

The first step in structured design is to represent design problem as the flow of data through a system. A data flow diagram is the network representation of a system showing processes and data interfaces between them.

DFD is built from four basic components: the data flow, the process, the data store, and the terminator.

Data flow diagrams of the existing and proposed system are shown in Appendix-A:

DATA DICTIONARY

Every system even the simplest one have a large number of data items. In order to maintain these data, a store house of data items is maintained known as data dictionary.

The data dictionary of our system is shown in (*Appendix D*).

4.4 DESIGN SPECIFICATIONS

System designing consists of the following three steps:

i. Output design.

ii. Input design

iii. File design.

4.4.1 OUTPUT DESIGN

Output from a system can be in form of queries and reports. Many factors have been considered while designing output to interface with the user. Some of these are as follows:

i. What output information is needed by the user.

ii. What format should it have? When is it needed and what it be the volume ?

iii. Outputs should be good looking.

iv. They should be easy to understand.

v. Unnecessary information should be avoided.

All newly designed formats have been verified by the hardware section in order to meet their requirements.

New output formats of the automated hardware system are as under:

i.	Group wise list of items/machines.	Fig. B-1
ii.	Location wise list of items/machines.	Fig. B-2&B-3
iii.	Details of a particular item/equipment	Fig. B-4
iv.	Maintenance contract report.	Fig. B-5
v.	Vender report.	Fig. B-6

4.4.2 INPUT DESIGNING

Input designing involves the following:

i. Code designing

ii. Form designing

4.4.2.1 CODE DESIGNING

Codes provide an efficient means of storing information. Codes are used to minimize both the memory wastage and data entry time. They also provide faster and efficient retrieval of information. Following codes are assigned in the proposed system:

Main Group Codes of Items

Code	Description
"01"	Micro-computer
"02"	Mini-computer

Items/Machine codes

Code	Description
"PR"	Printer
"CP"	CPU
"KB"	Key Board
"MN"	Monitor
"MO"	Mouse
"UP"	UPS
"ST"	Stabilizer
"CH"	Chair
"TB"	Table
"AC"	Air Conditioner

Main Location Codes

Code	Description

"01"	PRAL
"02"	CBR

CBR Location Codes

Code	Description
"HQ"	Headquarters
"CO"	Collectorate
"IT"	Income Tax
"CE"	Central Excise
"ST"	Sales Tax
"DR"	DRS

Collectorate Codes

Code	Description
"AC"	Appraisement Collectorate
"PV"	Preventive Collectorate
"PQ"	Port Qasim Collectorate
"EC"	Exports Collectorate
"HC"	Hyderababad Collectorate
"QC"	Quetta Collectorate
"MC"	Multan Collectorate
"FC"	Faisalababd Collectorate
"LC"	Lahore Collectorate
"GC"	Gujranwala Collectorate
"RC"	Rawalpindi Collectorate
"PC"	Peshawar Collectorate

4.4.2.2 FORM DESIGNING

Input forms play an important role in data entry phase. Installed items/machines specification document is used as input form.

4.5 FILE DESIGNING

File Designing is considered to be the most important phase of any efficient computerized system. Files are designed so that queries/reports are produced in the least amount of time. Moreover normalization techniques are used to avoid data redundancy and inconsistency in the files.

4.5.1. AS/400 DATABASE

AS/400 has many types of files, out of which we have used:

i. Physical File (PF)
ii. Logical File (LF)
iii. Display File (DSPF)
iv. Print File (PRTF)
v. ILE RPG Program File (RPGLE)
vi. Command Language Program File (CLP)
vii. Menu Files in Data description specification (MNUDDS)

The AS/400 system database is different from traditional system databases because of its innovative design which integrates database with operating system and support several different interfaces into a single database manager.

AS/400 database is an organized collection of all data files stored in the system. The Application System / 400 allow us to store data in one physical

structure (Physical file), whereas multiple user access is possible in various logical formats, organization and sequences (Logical file).

As the amount of data that we kept on our system, grows, and the interrelationship between various objects become more complex. An organized approach for handling this data is essential.

PROGRAM DESCRIBED FILE versus DDS

A file can be defined without specifying individual fields, called a program-described file. We have used external field descriptions using DDS (Data Description Specification) in this application because of the following considerations:

Any fields used as keys or in selection criteria must be defined. Field definitions have been coded in every program because the RPG/400 Compiler can copy the definition at its own. This helps to keep filed names and their attributes consistent, and reduces the coding time for input and output fields used in a program.

4.5.2. STEPS TAKEN IN DESIGNING FILES

File is collection of records in an organized manner; each collection has its own name. The organization is however in such a way that each data item can be retrieved easily. Following steps are taken for designing files:

STEP ONE:

First of all, the documents, reports and screens were examined and conceptual data structure was created with data items arranged in natural groups.

A Tag number & Item/Machine code were selected as a UNIQUE key which identify records in a data structure.

STEP TWO:

Relationship between UNIQUE key and other data items were established as:

One to one

One to many and

Many to many

STEP THREE:

Normalization is done in the third step of the design. It is the method of proving that what we have done intuitively was correct.

4.6 DESCRIPTION OF FILES

As a result of above-mentioned procedures, the proposed system uses thirteen physical data files, which will be discussed later. Moreover, keys have been used in the logical files, which not only provide access to the physical data but also in sequence and sort the records present either in one physical file or more. Another advantage of logical files is that we can select particular records dynamically. The file relation is shown in (Appendix D).

A brief description of these files is as follows:

FILE : ITMS' MAIN GROUP.PHYSICAL FILE.

Description: This file contains the name and coding information for main group of items.

***File Structure*:**

File Name: **MGRPCDEPF**

Record Name: **MGRPCDEREC**

Record Key(s): **MGRPCDE**

Record Length: **27**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Main group code	MGRPCDE	A	2	-
Main group name	MGRPNAM	A	25	-

FILE : ITMS' SUB GROUP.PHYSICAL FILE.

Description: This file contains the name and coding information for Items/Machines type.

File Structure:

File Name: **SGRPCDEPF**

Record Name: **SGRPCDEREC**

Record Key(s): **SGRPCDE**

Record Length: **27**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Sub group code	SGRPCDE	A	2	-
Sub group name	SGRPNAM	A	25	-

FILE : MAIN LOCATIONS.PHYSICAL FILE.

Description: This file contains the location name and codes for items.

File Structure:

File Name: **MLOCCDEPF**

Record Name: **MLOCCDEREC**

Record Key(s): **LOCCDE**

Record Length: **6**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Location code	LOCCDE	A	2	-
Location name	LOCNAM	A	4	-

FILE : CBR LOCATIONS.PHYSICAL FILE.

Description: This file contains the code information about the allied departments of CBR.

***File Structure*:**

File Name: **CBRLOCPF**

Record Name: **CBRLOCREC**

Record Key(s): **CBRLCDE**

Record Length: **22**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
CBR Location code	**CBRLCDE**	A	2	-
CBR Location name	**CBRLNAM**	A	20	-

FILE : COLLECTORATE CODES.PHYSICAL FILE.

Description: This file contains the code information for collectorate of customs

File Structure:

File Name: **COLLCDEPF**

Record Name: **COLLCDEREC**

Record Key(s): **COLLCDE**

Record Length: **32**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Collectorate code	COLLCDE	A	2	-
Collectorate name	COLLNAM	A	30	-

FILE : ITEMS' SPECIFICATIONS.PHYSICAL FILE.

Description: This file contains the master information of all Hardware items/equipment. The specifications about each item with location code etc. are also written for other files relation.

File Structure:

File Name: **ITMSPCPF**

Record Name: **ITMSPCREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: **189**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	TAGNUM	P	6	0-
Item/Machine code	SGRPCDE	A	2	-
Main group code	MSGRPCDE	A	2	-
Location code	LOCCDE	A	2	-
CBR Location code	CBRLCDE	A	2	-
Serial number	SERNUM	A	14	
Model	TYPE	A	14	-
Make	MAKE	A	14	-
Description of items	DESCRIP	A	40	-
Resolution	RESOL	A	20	-
Processing/printing speed	PRSPD	A	20	-
Hard disk capacity	HDCAP	A	10	-
RAM(Random access memory)	RAM	A	10	-
CD Status	CDSTS	A	1	-
Fax/modem card status	FAXSTS	A	1	-
Backup unit status	BAKSTS	A	1	-
Backup capacity	BAKCAP	A	10	
Backup time	BAKTME	A	10	
Date of delivery	DTODLV	A	10	-

FILE : FURNITURE SPECIFICATIONS.PHYSICAL FILE.

Description: This file contains the specifications of furniture items provided by PRAL.

***File Structure*:**

File Name: **FURSPCPF**

Record Name: **FURSPCREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: 64

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	**TAGNUM**	P	6	0-
Item/Machine code	**SGRPCDE**	A	2	-
Main group code	**MSGRPCDE**	A	2	-
Location code	**LOCCDE**	A	2	-
CBR Location code	**CBRLCDE**	A	2	-
Description	**DESCRIP**	A	40	-
Date of delivery	**DTODLV**	A	10	-

FILE : CBR HEADQUARTER.PHYSICAL FILE.

Description: This file contains the location information of all items/equipment installed at CBR Headquarters/Central Excise/Sales Tax/DRS.

File Structure:

File Name: **CBRHLOCPF**

Record Name: **CBRHLOCREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: **93**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	**TAGNUM**	**P**	**6**	**0**
Items/Machine code	**SGRPCDE**	**A**	**2**	
Contact person	**CONTPER**	**A**	**25**	**-**
Room Number/section	**ROMNUM**	**A**	**10**	**-**
Office Address	**OFFADD**	**A**	**30**	**-**
City	**CITY**	**A**	**20**	**-**

FILE : CBR COLLECTORATE.PHYSICAL FILE.

Description: This file contains the location information of all items/equipment installed at Collectorate of Custom.

***File Structure*:**

File Name: **CBRCLOCPF**

Record Name: **CBRCLOCREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: **60**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	**TAGNUM**	**P**	**6**	**0**
Items/Machine code	**SGRPCDE**	**A**	**2**	
Collectorate Code	**COLLCDE**	**A**	**2**	-
Office Address	**OFFADD**	**A**	**30**	-
City	**CITY**	**A**	**20**	-

FILE : CBR INCOME TAX.PHYSICAL FILE.

Description: This file contains the location information of all items/equipment installed at Income Tax.

***File Structure*:**

File Name: **CBRILOCPF**

Record Name: **CBRILOCREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: 66

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	TAGNUM	P	6	0
Items/Machine code	SGRPCDE	A	2	
Region	REGION	P	2	0
Zone	ZONE	P	2	0
Range	RANGE	P	2	0
Circle	CIRCLE	P	2	0
Office Address	OFFADD	A	30	-
City	CITY	A	20	-

FILE : PRAL LOCATION.PHYSICAL FILE.

Description: This file contains the location information of all items/equipment installed PRAL Office.

File Structure:

File Name: **PRALLOCPF**

Record Name: **PRALLOCREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: **113**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	TAGNUM	P	6	0
Items/Machine code	SGRPCDE	A	2	
Officer Name	OFFNAM	A	30	-
Designation	DESIG	A	25	-
Office Address	OFFADD	A	30	-
City	CITY	A	20	-

FILE : MAINTENANCE CONTRACT.PHYSICAL FILE.

Description: This file contains the information about the maintenance contract of items.

File Structure:

File Name: **MNTCNTRPF**

Record Name: **MNTCNTRREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: **248**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	TAGNUM	P	6	0
Items/Machine code	SGRPCDE	A	2	
Contract with company	CNTRWTH	A	30	-
Date of Contract	DTOCNTR	L	-	-
Contract Validation date	CNTRVUPT	L	-	-
Type of contract	TYPOCNTR	A	30	-
Contractor Address Line1	CNTRADDL1	A	30	-
Contractor Address Line2	CNTRADDL2	A	30	-
City	CITY	A	20	
Contractor Tel Number 1	CNTRTEL1	A	15	-
Contractor Tel Number 2	CNTRTEL2	A	15	-
Contractor Fax Number	CNTRFAX	A	25	-
Contractor E-mail Address	CNTREMAIL	A	25	-

FILE : VENDER INFORMATION.PHYSICAL FILE.

Description: This file contains the personal information of the venders for each item.

File Structure:

File Name: **VNDINFPF**

Record Name: **VNDINFREC**

Record Key(s): **TAGNUM**

SGRPCDE

Record Length: **248**

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD LENGTH	DECIMAL POSITION
Tag number	TAGNUM	P	6	0
Items/Machine code	SGRPCDE	A	2	
Vendor Name	VNDNAM	A	30	-
Vendor person	VNDPER	A	30	-
Person's Designation	VNDTITLE	A	20	-
Vender Address Line1	VNDADDL1	A	30	-
Vender Address Line2	VNDADDL2	A	30	-
City	CITY	A	20	
Vender Tel Number 1	VNDTEL1	A	15	-
Vender Tel Number 2	VNDTEL2	A	15	-
Vendor Fax Number	VNDFAX	A	25	-
Vendor E-mail Address	VNDEMAIL	A	25	-

4.7 SOFTWARE SELECTION

There are three parts of a database ; input , output and real programs which manage all the operation and storage of information. Out of these, the programming aspect is the most important as it control both input and output activities and storage of information or a database. Thus, it is very important that a suitable programming language is chosen keeping in view all aspects of a problem.

The problem under consideration is such that it involves the storage and processing of large amount of data specifying the records of thousands of items. Moreover, it requires retrieval of information.

The native OS/400 operating system supported by ILE RPG/400 fulfills all these requirements quite well because of its features.

The features of RPG IV encompass the following subjects:

i. Coding specifications
ii. Cycle programming
iii. Indicators
iv. Operation codes
v. Table handling
vi. Sequential access
vii. Random Access
viii. Sort

CHAPTER

5

SYSTEM DEVELOPMENT

AND

IMPLEMENTATION

SYSTEM DEVELOPMENT AND IMPLEMENTATION

5.1 INTRODUCTION

The most important step in developing an efficient computerized system is Software development. The purpose of software development is to transfer a complete proposed system into an executable computer program.

Programming is not just a science. It has rather growing into an article of much aesthetic value. There are a number of clearly identifiable steps that are always involved in the programming phase, and these provide a convenient framework. The steps are as follows:

1. Defining the problem
2. Planning a solution
3. Maintaining the program

Purpose of programming a task is to coding, debugging and testing each program module before and after integrating them into software.

Development of modules is the most complicated and time consuming stage in system development. Programs are developed in order to have consistency or compatibility with the proposed system. Each module has to do it's specified job properly, according to input and output requirements of the system

5.2 SYSTEM MODULES

In an Automated system different modules have been constructed separately by programming. Purpose of each module is to perform a specific task. Automated hardware inventory modules utilize all features of AS/400, e.g. external field descriptions through DDS, logical files, single format and multiple format display files with sub-files: to incorporate more than one physical data file on one screen like FoxPro.

In order to facilitate the user operation, the old concept of making data entry modules separate from those of deletion and modification modules has been rejected. In this approach, If by chance, some mistake occurrs while data is entered the user had no option but to exit from data insertion module and then only after selecting the modification menu option, could be correct previously entered wrong data, which resulted in lack of concentration and co-ordination of work.

The prominent features of data entry modules have removed this drawback. In this facility while remaining in the very same menu option, a user can perform following operations by selecting function keys.

Add	F4
Update	F5
Display	F6
Delete	F10

This facility of performing all these tasks with the help of function keys Saves a lot of time, which helps in better concentration, and co-ordination of activities.

5.3 SYSTEM TESTING

Even if the system is developed using correct algorithms, its reliability remains doubtful. The validation of results is very important to make the system acceptable. Before making the system operational, it is necessary to check that the new system is comprehensive within its limits and is producing the required outputs correctly.

Programs and subroutines are confirmed for the required results. .All sub programs are tested to a satisfactory level, their interfaces are tested and combined

results are compared with the manual results. All possible efforts are made to make sure that the system produces desirable results under all circumstances.

During this process all programming bugs and minor design faults are removed, necessary changes are made in the design and structure, and special care is taken not to change actual logic of the system.

5.4 SYSTEM EVALUTION

The new system should be evaluated to determine whether stated objectives are met or not. Evaluation is necessary to keep the system updated for business and economic environment, as will as technological changes in the electronic data processing. System evaluation is also important because it judges the compatibility of developed system with the existing system and check it's validity under organisational constraints. Generally, an information system that incorporates properties such as accuracy, time-lines, completeness and conciseness is declared to be successful.

However, comparisons are often made in one or more of these properties for economic reasons. The user of a new system is in the best position to determine, on an ongoing basis, effectiveness of the system.

Accuracy is the ratio of correct information to the total volume of information produced over a period. The accuracy level depends upon the type of information produced. Validation checks have been made to ensure accuracy and foolproofing the system.

5.4.1 TIME LINESS

In the previous system the major problem faced by the management was that if somebody needed some information, he had to wait a few days for the result, till the information was no longer needed, but the important characteristics, of the new system is that it provides query management which responds instantaneously and accurately.

5.4.2 CONCISENESS

Concise information that summarises the relevant data, make various type of searches and comparative analysis easier, and point out areas of interest; enables a general user and specially the management to make better, effective and timely decisions.

5.4.3 EFFICIENCY

The new system is efficient not only because it contains all the three characteristics stated above, but also due to the reason that it is more user friendly, is menu driven, provides ready on-line help, and does it all while maintaining a multilevel security of users and their relative information Above all it ensures data integrity and thus enhanced reliability.

5.5 IMPLEMENTATION

Implementation means the process of actually running the tested and debugged software on user premises. The actual process of conversion from a manual system to and automated one starts right at this phase.

Implementation of a project involves the following activities:

⇒ Planning and scheduling of the implementation process.

⇒ Organizational planning and personnel administration.

⇒ Final system design and testing.

⇒ establishing standards of performance and control procedures

⇒ Conversion from old to new system..

The most considerable process concerning implementation phase is the conversion plan, which is discussed in detail.

5.6 CONVERSION

In data processing, conversion is defined as the process of changing :

- From one data processing to another.

- From one form of representation to the other.

There are several conversion option available that will reduce the risk of mishap in the new system. There are four basic patterns while implementing the new system:

1. Direct conversion
2. Gradual change Over
3. Parallel system operation
4. Pilot conversion

The main purpose in conducting comparative study is to argue for one method of conversion over the other by keenly studying the advantages and limitation in either of the conversion methods. An implementation phase is rigidly based upon this comparative study.

DIRECT CONVERSION METHOD

Direct conversion method stresses upon introduction of a completely new system without any reference to the existing system. The old system is abandoned and the new system becomes operational. This method is suitable when the new system is entirely different from the existing one.

GRADUAL CONVERSION METHODS

Gradual conversion technique allows one program at a time to replace an activity of the existing system. Gradually, the present system is substituted by the newly designed system. Small-scale operations are conducted first to confirm that this changeover is successful. When the new system is completely tested, the old system is gradually discarded, and the process continues until the new system is totally functional.

PILOT CONVERSION METHOD

In pilot conversion method, new system is implemented in parts the system is implemented in modules often known as Pilot Projects.

PARALLEL CONVERSION METHOD

In parallel conversion method, both the old and the newly developed systems are run simultaneously. Data is processed or moved through systems concurrently and when data is properly installed, the new system has thoroughly been checked the users are familiarised only then is suitable time to abandon altogether the operating older system. Safest approach for conversion is to run both new and old systems at the time, until it is satisfactorily established that the new system is producing reliable results. It keeps the good-old familiar system handy, in case anything goes wrong with the newborn.

5.7 PROPOSED CONVERSION METHOD

Parallel Conversion appears to be the most appropriate technique for our project. We recommend it because it provides an opportunity to compare results of the existing system with those of the developed system. Another advantage of this approach is that the risk of failure is covered. Although this implementation approach is more expensive and increases the workload, however, the old system will ensure safety and familiar routine procedures will be followed for some time until the new system is fully operational.

5.8 TRAINING OF PERSONNEL

The Developed System is quite user friendly, so that any person can obtain

the required information efficiently out of the data base, after few weeks training & practice. Furthermore Self Explanatory Menus and Online Help will keep guiding the user. However, a comprehensive lecture to familiarise the staff with AS/400 will also help in better understanding of the system.

CHAPTER

6

USER GUIDE

User Guide

As an AS/400 terminal is powered on, the first screen that appears is (Appendix E) the *Sign On Screen.* Five information are requested in this screen:

- User ID
- Password
- Program
- Menu
- Current Library

To enter hardware inventory system, user is required to fill just the first two. After confirmation with the System Administrator, enter an appropriate User ID and the specified password; this will take you to Main Menu. M A I N M E N U (Appendix E) is the first menu that belongs to this project. Since all other menus follow its pattern, so let's first study this one menu more elaborately. First of all notice the top line. AS/400 standards have three information in this very line. Starting from left, the first information is *Member Name.* In the middle is *Menu Title,* and at the right most ends is the *Menu Status.* The top line in the main menu appear some what like:

MAINMNU **MAINMNU** **MAINMNU**

Member Name is actually name of the file present in the System and stored at the **Hard Disk.** Menu title is the identification that we have assign to a particular menu. Menu status tells you the level you are at, for instance, whether

you are residing at a menu or a submenu. We have changed this line format as follows:

TT/TT/TT M A I N M E N U DD/DD/DD

Next to this line you will see:

Select one of the following:

Then there is a list of numbered options. On the System Main Menu, the options along their numbered sequence are as follows:

1. Data Maintenance
2. Queries
3. Reports
4. Other functions

90. Sign off

Fourth and third line from bottom, together are for command entry; thus in two part, it is known as the *Command line* in AS/400 standard. Let us take a look at it:

Selection or command

===> _____

You can instantly identify; that first line is the *message,* while the next line is actual *prompt* line, with a long prompt area identified by underscores. The user is supposed to type a required option or command on the command line.

We have changed this line to an option line like this:

```
Selection
===>  ____
```

You can instantly identify; that first line is the message, while the next line is actual prompt line. You can enter your option on the option line. If you want to run an option, you simply have to press the ENTER key after you have typed down the option number.

Last two lines list some other functions available at menu:

```
F3=Exit    F12=Cancel
F13=Information Assistant        F16=AS/400 main menu
```

Now that we know the general structure of menus present in the hardware inventory system, let's take a look at each. The first menu, as you know by now is the **M A I N M E N U** which happens to be the main menu for the hardware inventory system, all other menus are in a way subroutines or nesting of this very menu. We list again the items at this menu, one by one for discussion.

1. Data maintenance
2. Queries
3. Reports
4. Other functions

90.Sign off

DATA MAINTENANCE

First option is the **Data maintenance**. It is a menu that can add, update, display, and delete the information on various files. Information to all the hardware system is handled by this option.

After the data maintenance option a screen menu is displayed like this:

OOOOOOOO MODE

TT/TT/TT DATA MAINTENANCE DD/DD/DD

Item main group code ---> BB

Tag number ----------> 999999-

F3=End Job F4=Add F5=Update F6=Display F10=Delete

Addition of records is handled by F4 function key in data maintenance screen menu as given above. After pressing F4 the DATA ADDITION MENU screen menu is displayed. The format of data addition screen menu is as follows:

OOOOOOOO MODE

TT/TT/TT DATA ADDITION MENU DD/DD/DD

Main group name: OOOOOOOOOOOOOOOOOOOOOOOO

Tag number: 666666

Enter machine code ----> BB

****

Give any one of the following options

1. Addition to all files
2. Addition to new location

B 3. Maintenance file addition

4. Vender file addition

F12=Exit

Updation of records is handled by F5 function key in data maintenance screen menu as given above. After pressing F5 the DATA UPDATION MENU screen menu is displayed. The format of data updation screen menu is as follows:

OOOOOOOO MODE

TT/TT/TT DATA UPDATION MENU DD/DD/DD

Main group name: OOOOOOOOOOOOOOOOOOOOOOOO

Tag number: 666666

Enter machine code -----> BB

****

Press one of the following PF keys

F4: Item/machine specifications updation

F5: Location-wise updation

F6: Maintenance updation

F10: Vender file updation

F12=Exit

Display of records is handled by F6 function key in data maintenance screen menu as given above. After pressing F6 the DATA DISPLAY MENU screen menu is displayed. The format of data display screen menu is as follows:

OOOOOOOO MODE

TT/TT/TT DATA DISPLAY MENU DD/DD/DD

Main group name: OOOOOOOOOOOOOOOOOOOOOOOO

Tag number: 666666

Enter machine code -----> BB

****

Press one of the following PF keys

F4: Item/machine specifications display

F5: Location specifications display

F6: Maintenance Contract display

F10: Vender file display

F12=Exit

Deletion of records is handled by F10 function key in data maintenance screen menu as given above. After pressing F10 the DATA DELETION MENU screen menu is displayed. The format of data deletion screen menu is as follows:

OOOOOOOO MODE

TT/TT/TT DATA DELETION MENU DD/DD/DD

Main group name: OOOOOOOOOOOOOOOOOOOOOOOO

Tag number: 666666

Enter machine code -----> BB

****

Press any one of the following PF keys

F4: Item/machine specifications deletion

F5: Location specifications deletion

F6: Maintenance Contract deletion

F10: Vender file deletion

F12=Exit

These menu screens handle the database files of the system. These screen menus in various files do data entry and updation.

QUERIES

It is the second option at the main menu of hardware inventory system. Various queries offered are:

1. Details of a particular item/machine
2. Group wise search of items/machines
3. Location wise search of items/machines
4. Inquire into the maintenance contract file
5. Inquire into the vender information file
6. Inquire against a tag number

Some options of queries menu have submenus. The option 4 and 5 have the following submenus:

The menu against option 4 has the following options:

1. Inquire for the maintenance contract date
2. Inquire for the contractor address

The menu against option 5 has the following options:

1. Inquire for the vender address
2. Inquire for the vender personal information

Queries against the options 1, 2, 3 & 6 have some query screens to get the required information from different files.

REPORTS

It is the third option at the main menu of hardware inventory system. Various reports offered are:

1. Details of a particular item/machine
2. Group wise list of items/machines
3. Location wise list of items/machines
4. Maintenance contract report
5. Vender report

Reports against the options 1, 2 & 3 have some query screens to get the required information from different files. The first option gives the detail report of a particular item which contains the tag number, machine type, location name, CBR location name (if any), date of delivery. The second option gives the detail report of each group. To get the group code screen menu is called and report is generated. The third option is used for location-wise report of items/machines. Two different location report formats are generated against the location code. One format is for PRAL and the other is for CBR. The contents of PRAL location report are location name, tag no., machine type, officer name, description. The contents of CBR location report are location name, tag no., machine type, CBR location, description.

The maintenance contract report contents are tag no., machine type, contractor name, date of contract, contract valid up to date. The vender report contains the tag no., machine type, vender name, vender address, vender city.

OTHER FUNCTIONS

Fourth option at the main menu is Other Functions. It contains:

1. Work with spool file
2. System messages

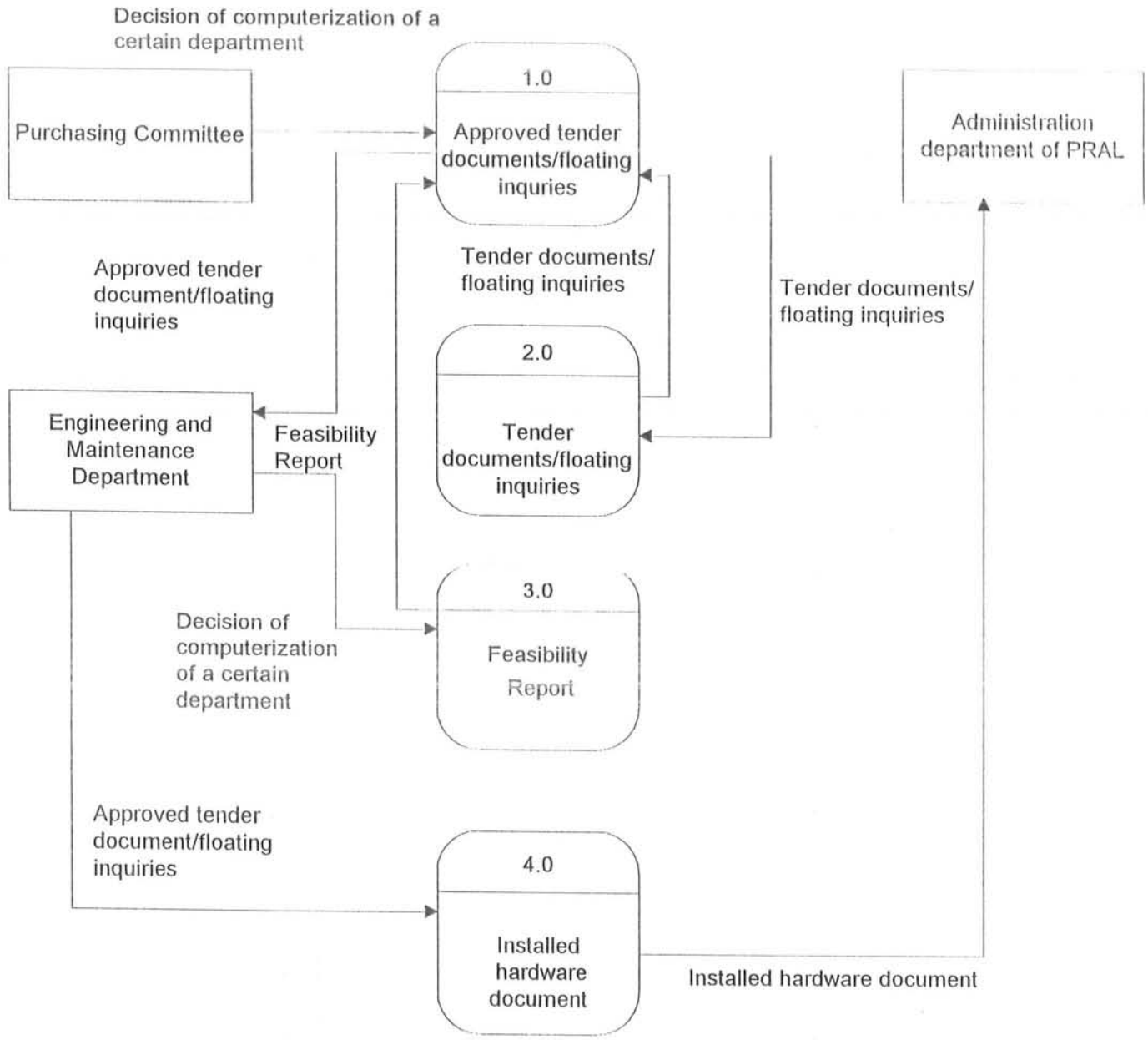
To exit from this menu F3 function key is pressed. Work with spool file is a utility to check out the spool information for print etc. The status of any spool file for print can be changed with this utility. System messages is a utility to check out what the system is telling, asking or demanding from you to do.

APPENDIX

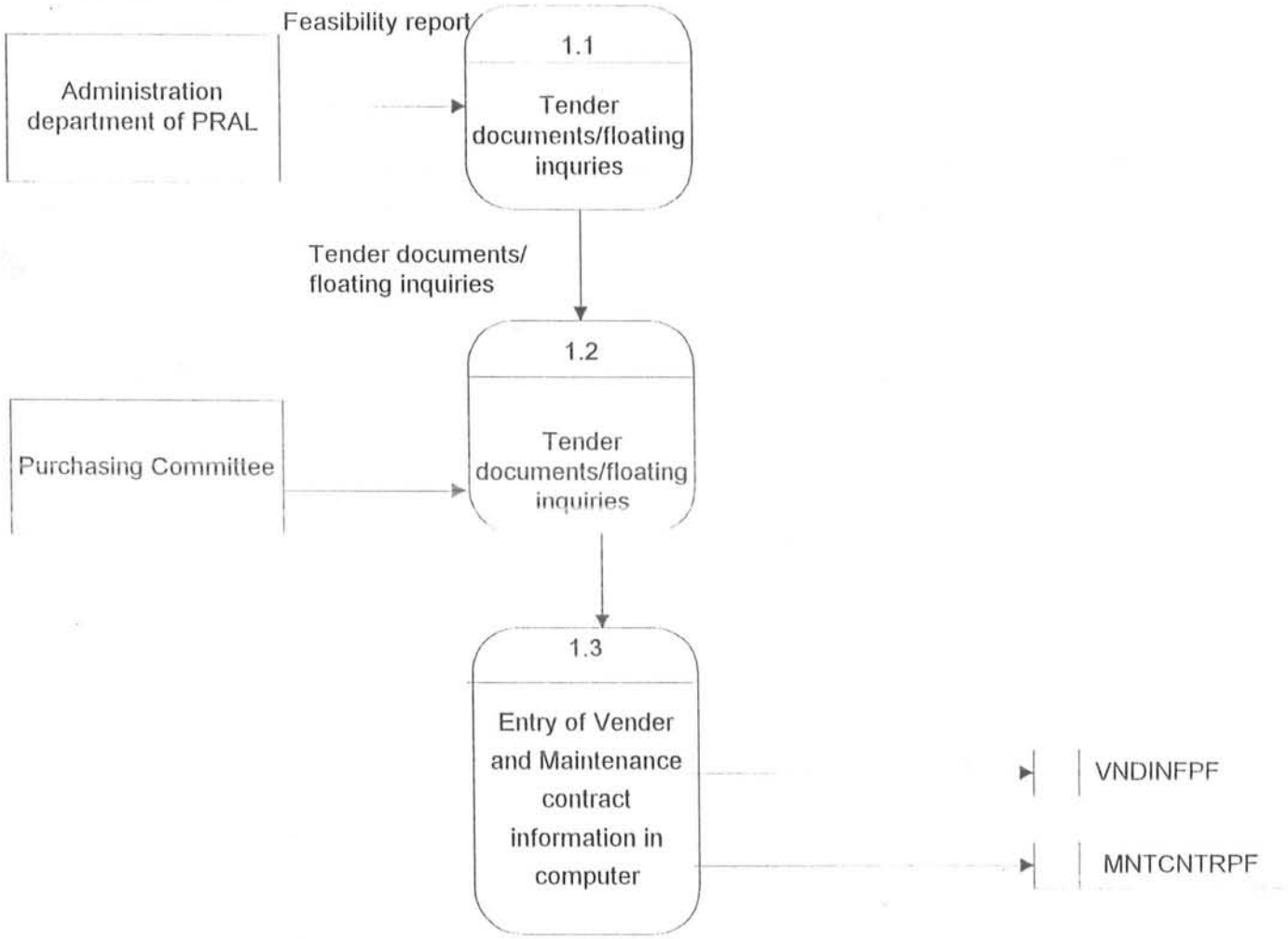
A

DATA FLOW DIAGRAMS

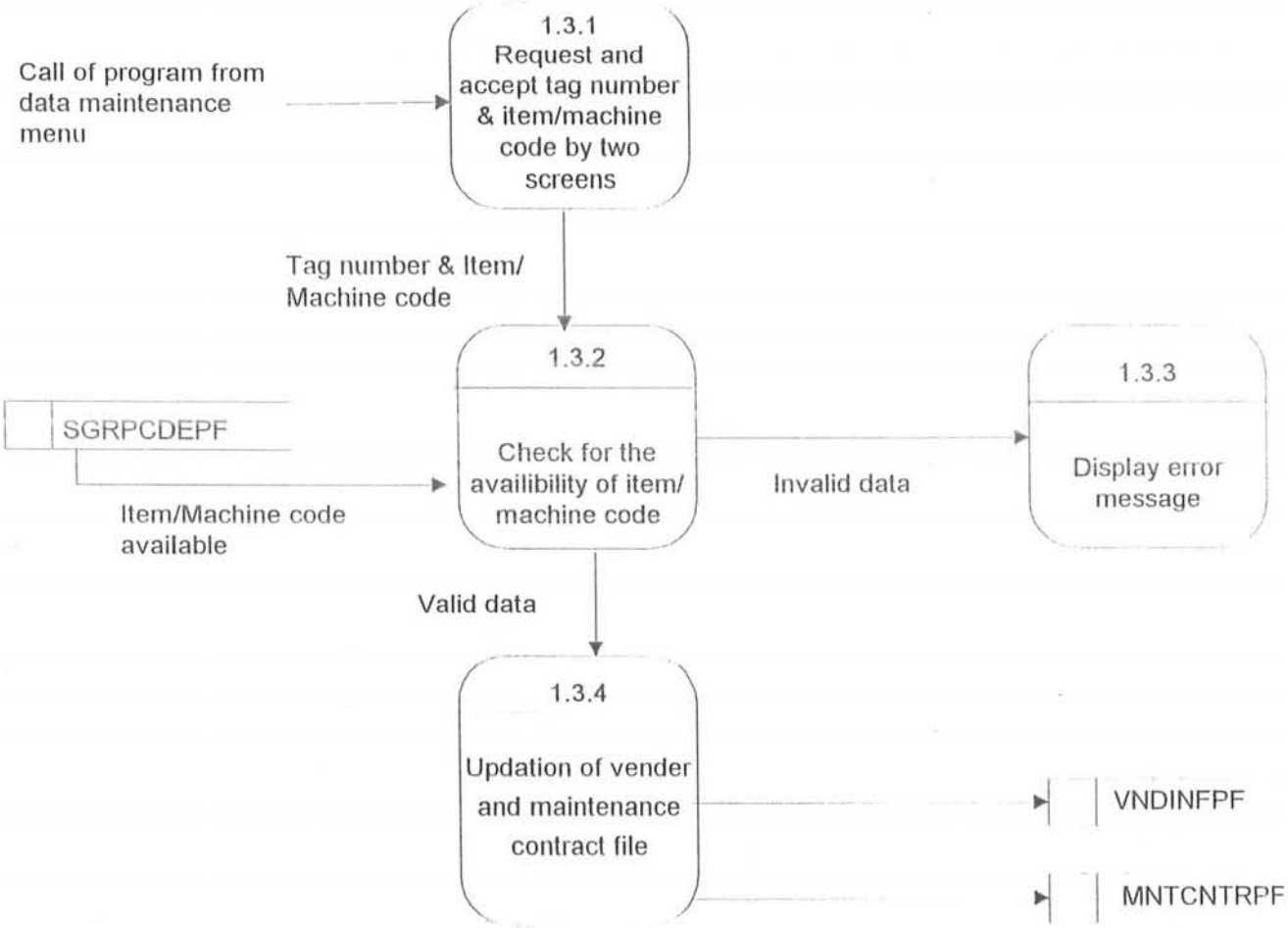
Level 0 DFD showing the main components of the propsed system



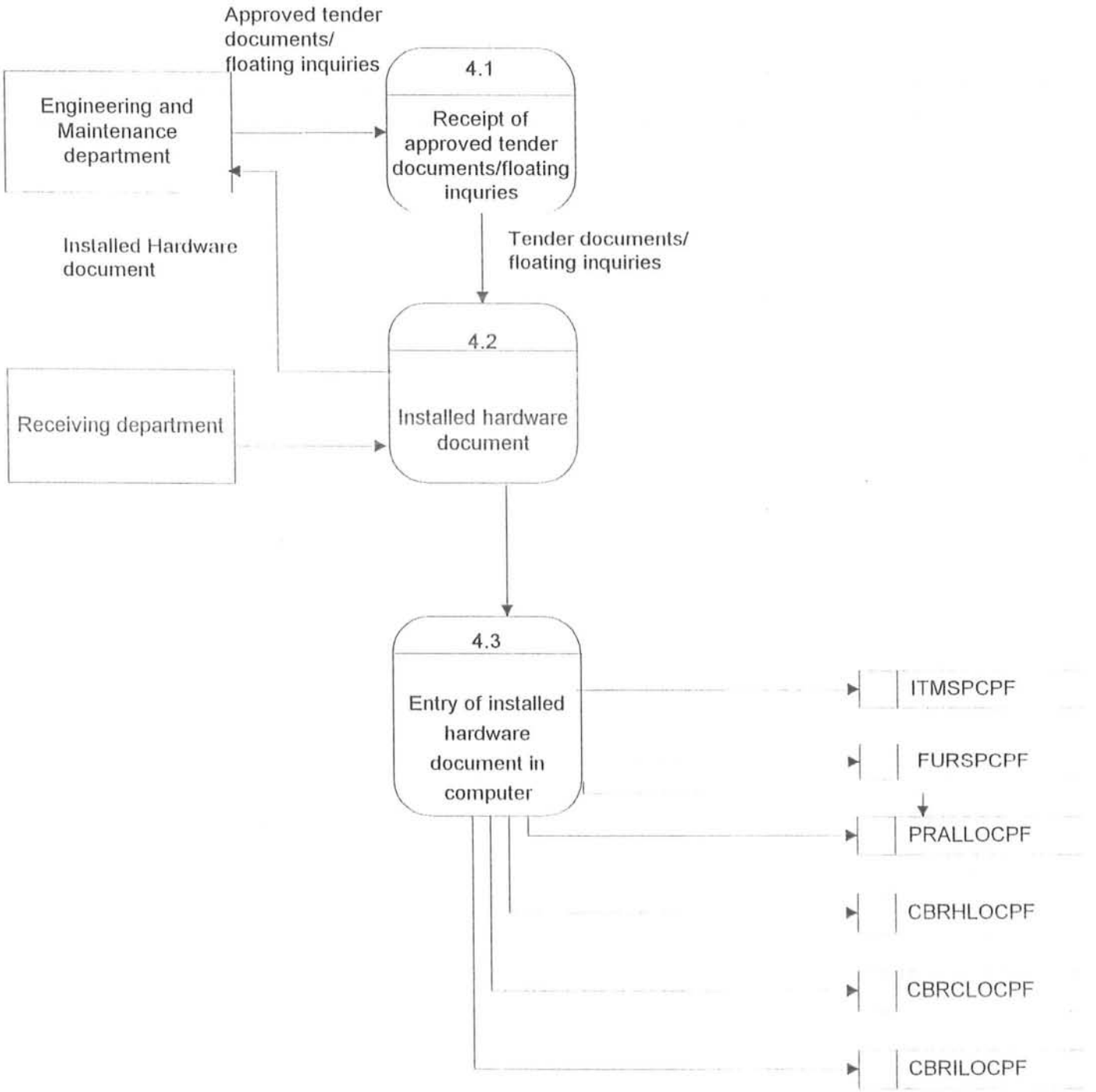
Level 1 DFD showing the process of tender documents/floating inquiries



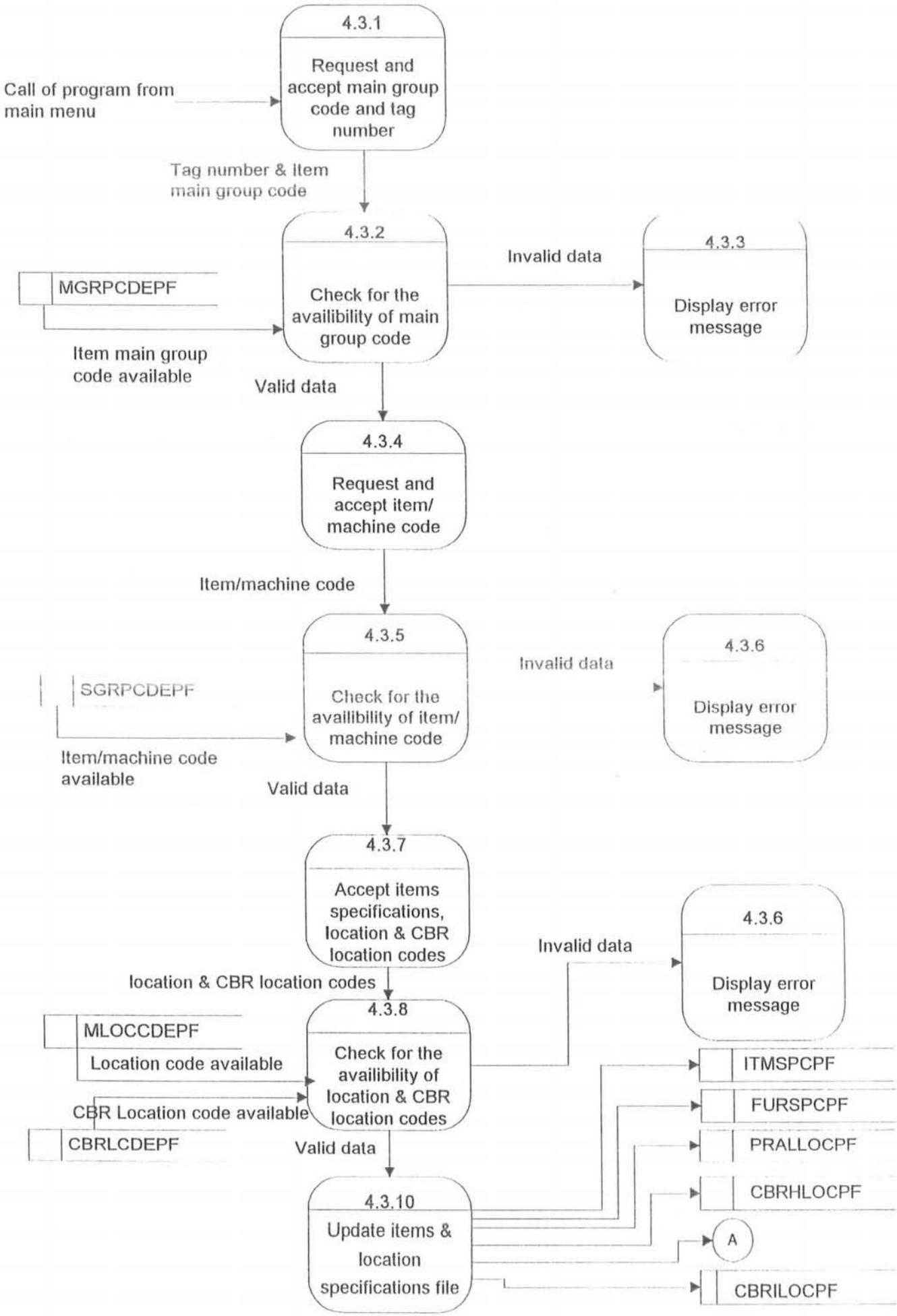
Level 2 DFD showing the data entry process in computer

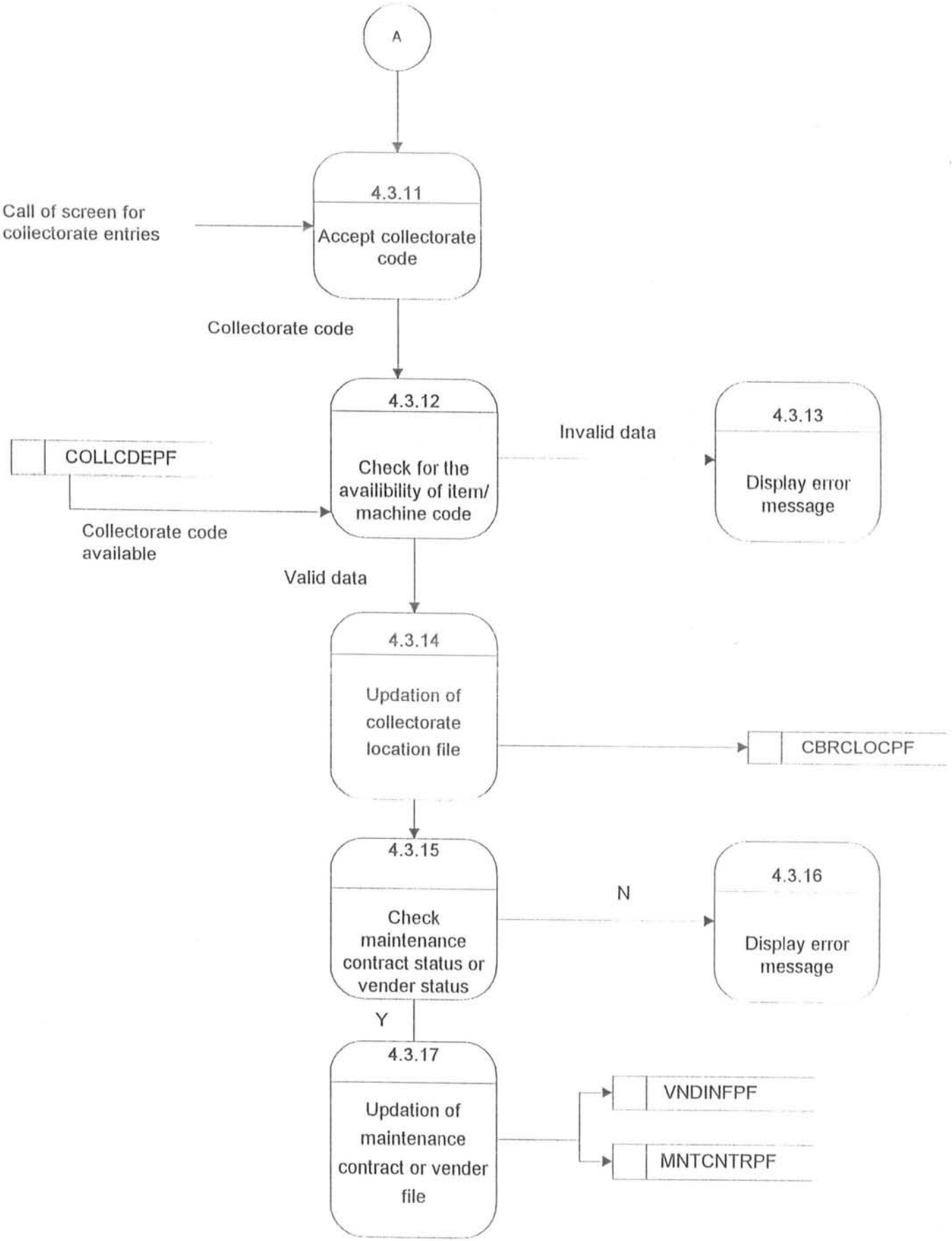


Level 1 DFD showing the process of preparing installed hardware documents



Level 2 DFD showing the data entry process in computer




A
4.3.11
Accept collectorate code
Call of screen for collectorate entries
Collectorate code
4.3.12
Check for the availibility of item/ machine code
COLLCDEPF
Collectorate code available
Invalid data
4.3.13
Display error message
Valid data
4.3.14
Updation of collectorate location file
CBRCLOCPF
4.3.15
Check maintenance contract status or vender status
N
4.3.16
Display error message
Y
4.3.17
Updation of maintenance contract or vender file
VNDINFPF
MNTCNTRPF

APPENDIX

B

OUTPUT FORMATS

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENACE DEPARTMENT

DATE : DD/MM/YY
PAGE: 999

Group Wise List Of Items/Machines

Group Name : XXXXXXXXXXXXXXXXXXXXXXXXX

Tag No.	Item/Machine type	Location	CBR location (if any)
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXX

FIG. B-1

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENACE DEPARTMENT
Location wise list of Items

DATE : DD/MM/YY
PAGE: 999

Location xxxx

Tag No.	Machine Type	CBR Location	Description
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FIG. B-2

Location xxxx

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENACE DEPARTMENT
Location wise list of Items

DATE : DD/MM/YY
PAGE: 999

Tag No.	Machine Type	Officer Name	Description
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FIG. B-3

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENACE DEPARTMENT

DATE : DD/MM/YY
PAGE: 999

Details of a particular Item/Machine

Item Machine type : XXXXXXXXXXXXXXXXXXXXXXXX

Tag No.	Location	CBR location (if any)	Date of Delivery
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	
999999	XXXX	XXXXXXXXXXXXXXXXXXXX	

FIG. B-4

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENACE DEPARTMENT
Maintenance Contract Report

DATE : DD/MM/YY
PAGE: 999

Tag No.	Machine Type	Contractor Name	Date of Contract	Contract Valid Up to
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX

FIG. B-5

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENACE DEPARTMENT
Vendor Report

DATE : DD/MM/YY
PAGE: 999

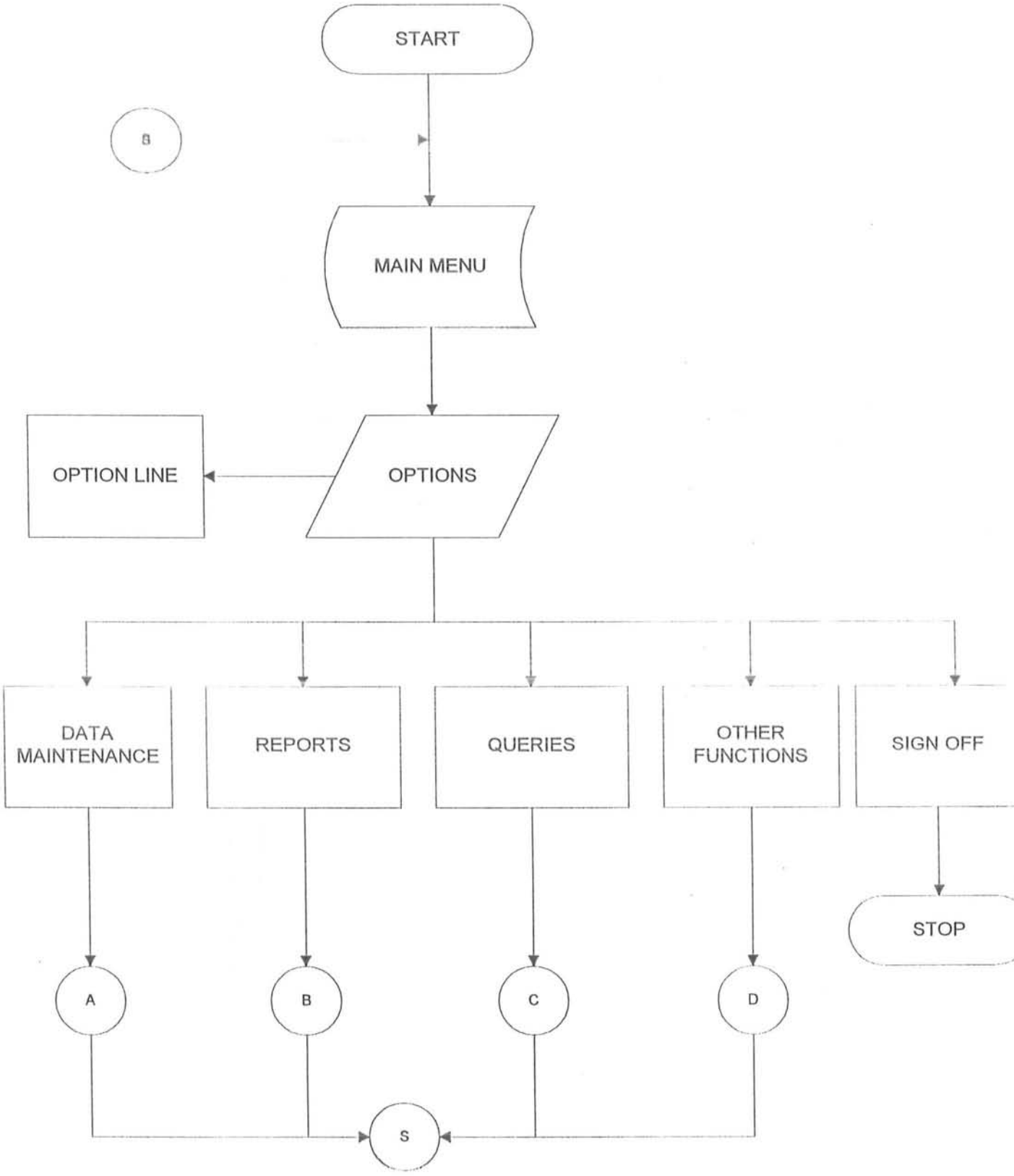
Tag No.	Machine Type	Vender Name	Vender Address	City
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
999999	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX

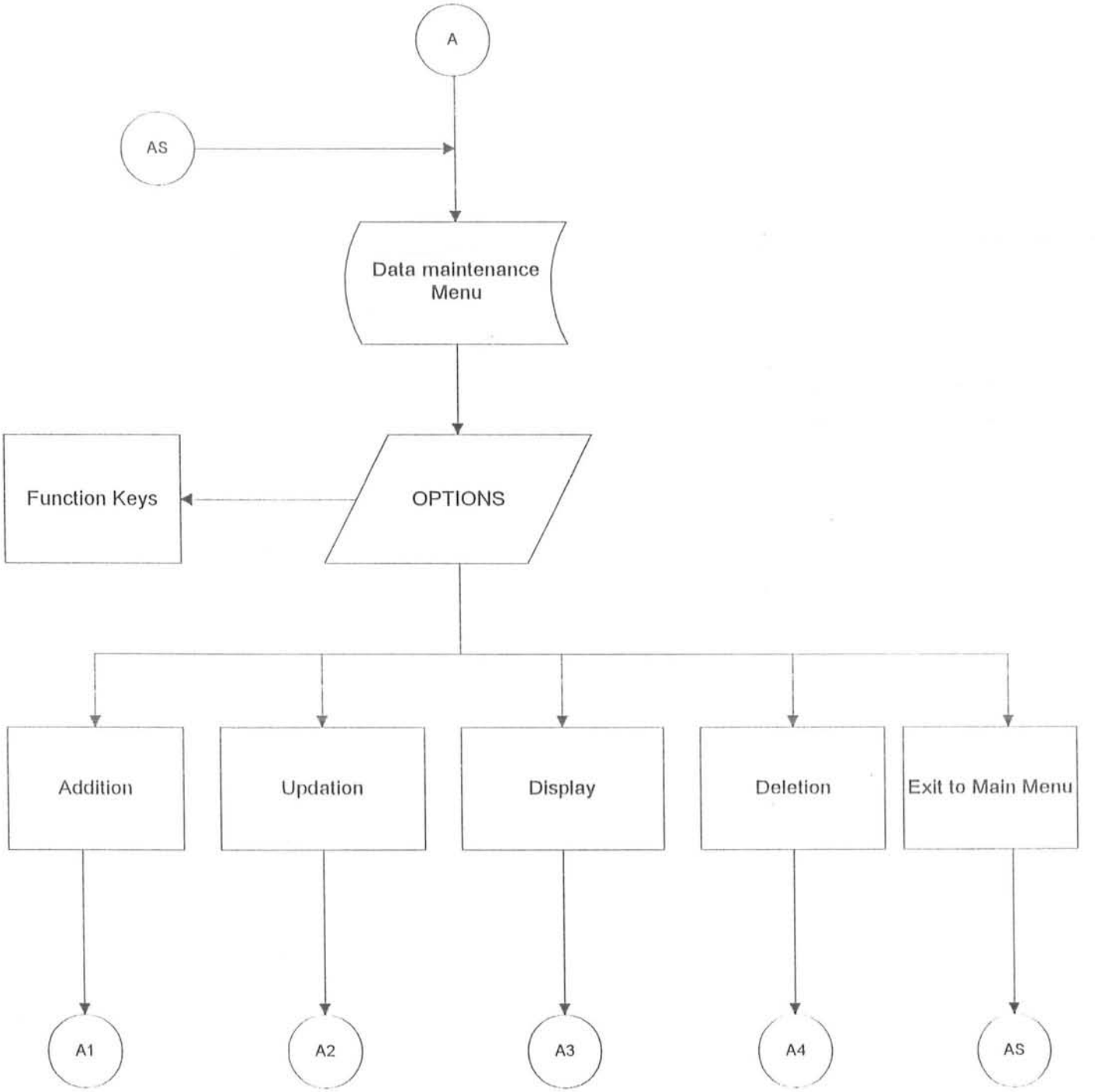
FIG. B-6

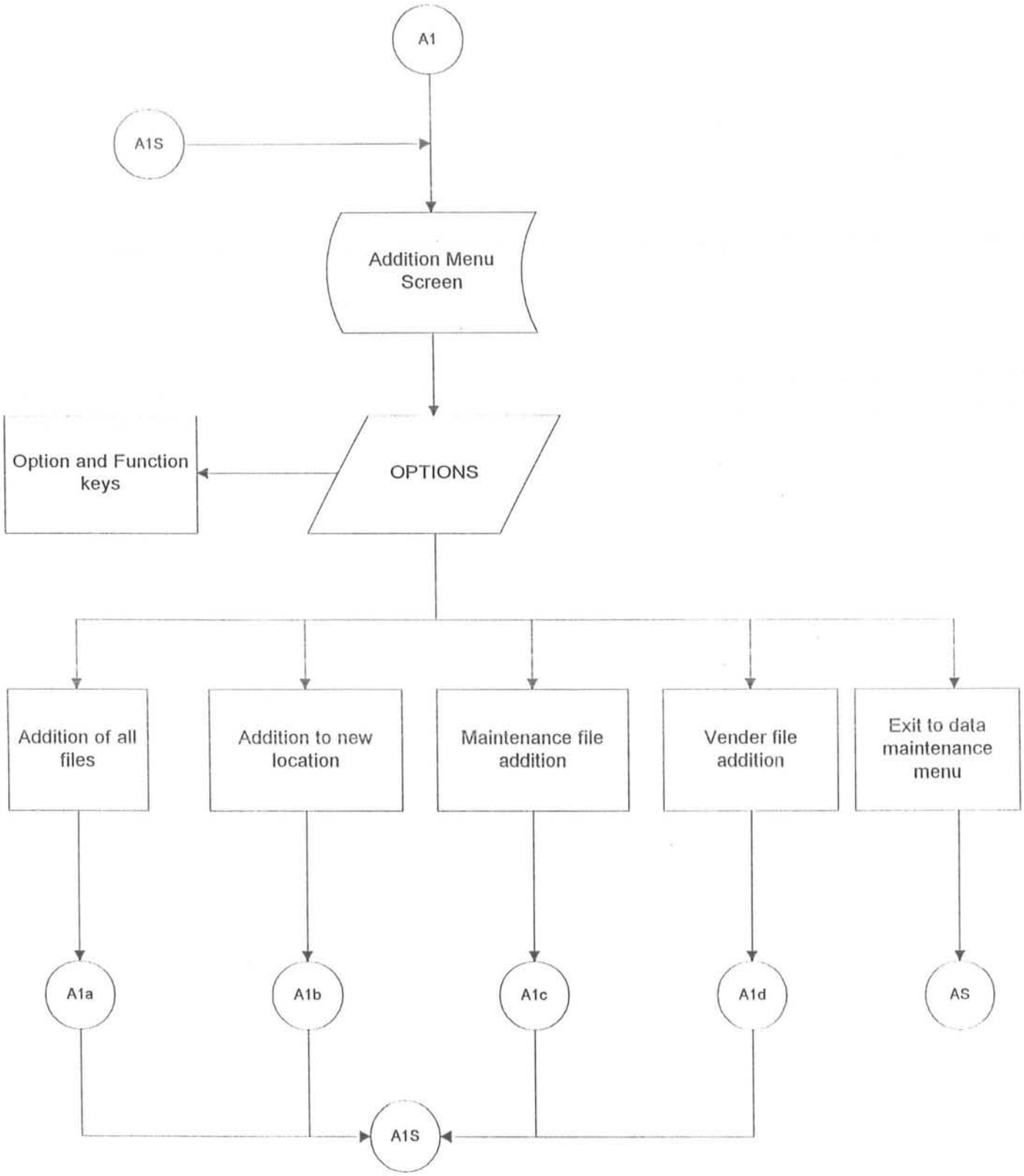
APPENDIX

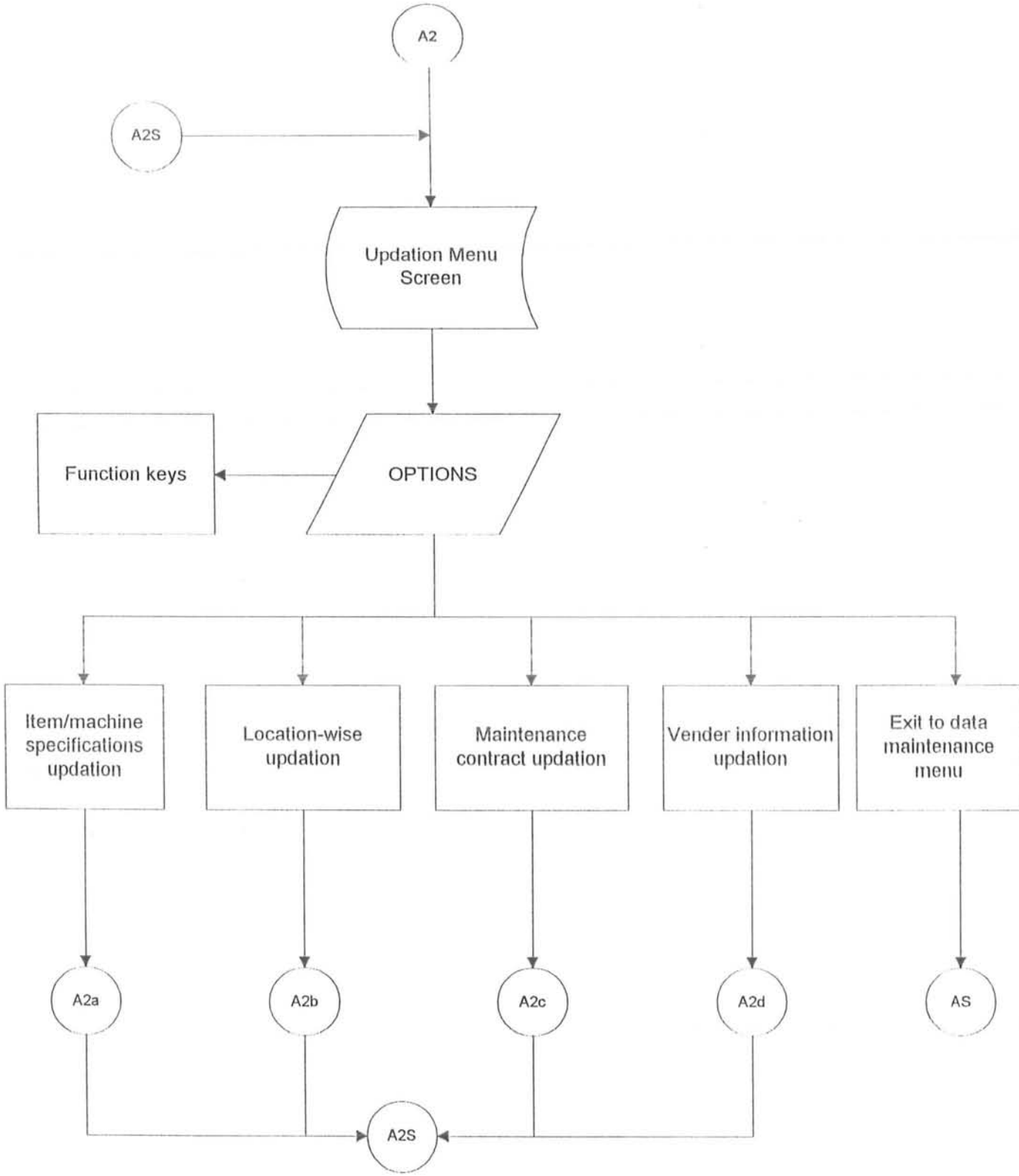
C

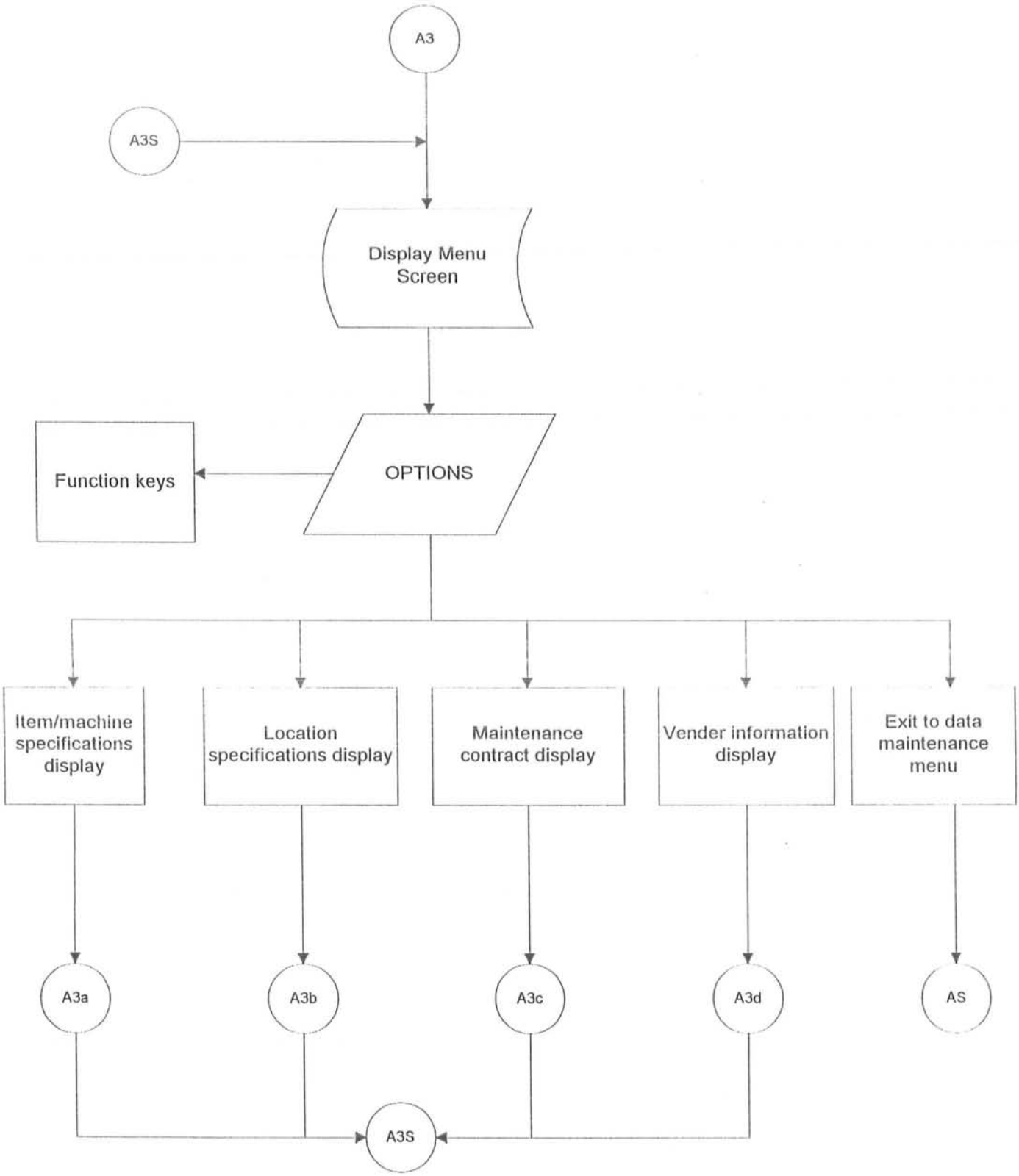
SYSTEM FLOW CHARTS

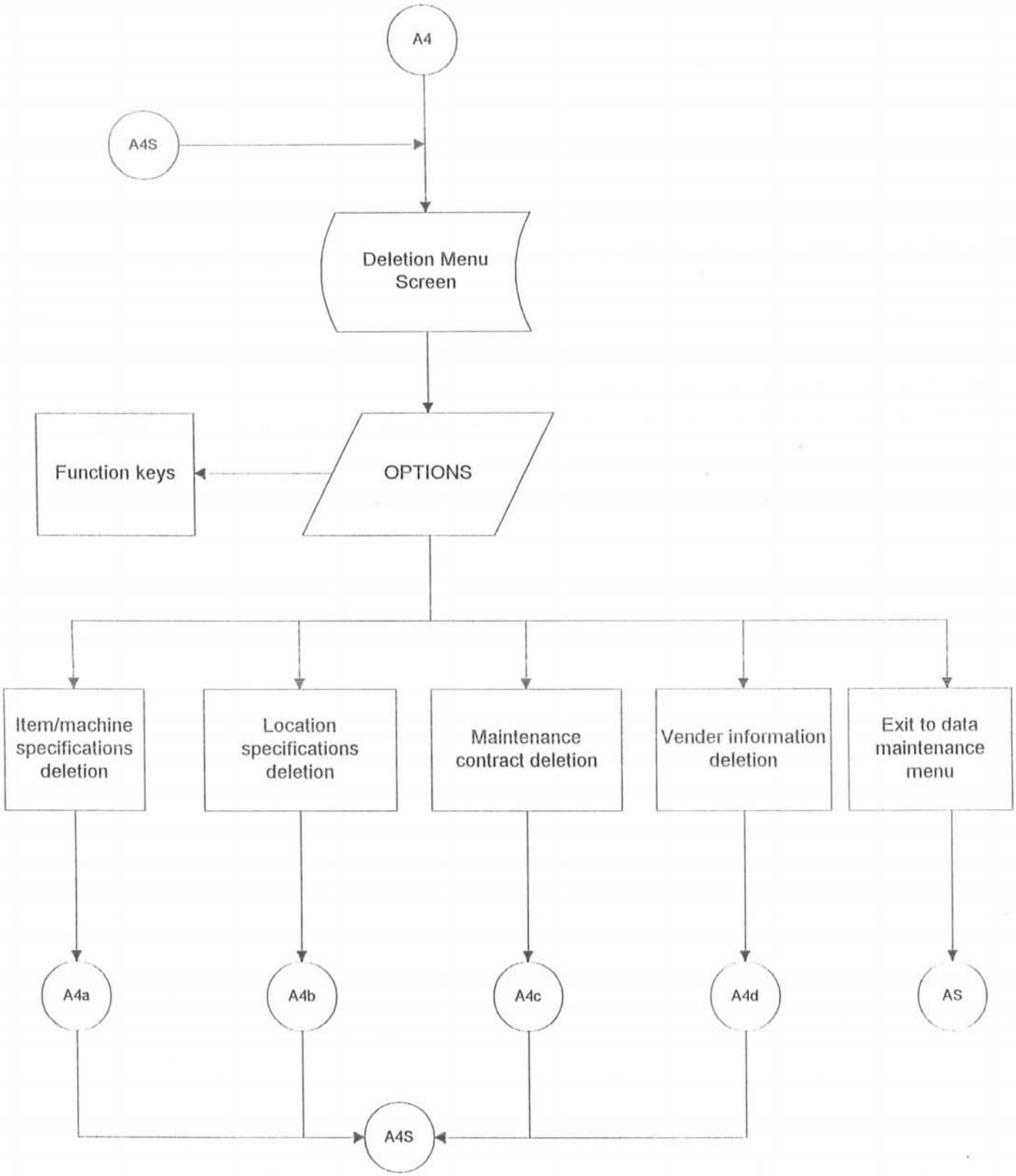

START
B
MAIN MENU
OPTION LINE
OPTIONS
DATA MAINTENANCE
REPORTS
QUERIES
OTHER FUNCTIONS
SIGN OFF
STOP
A
B
C
D
S

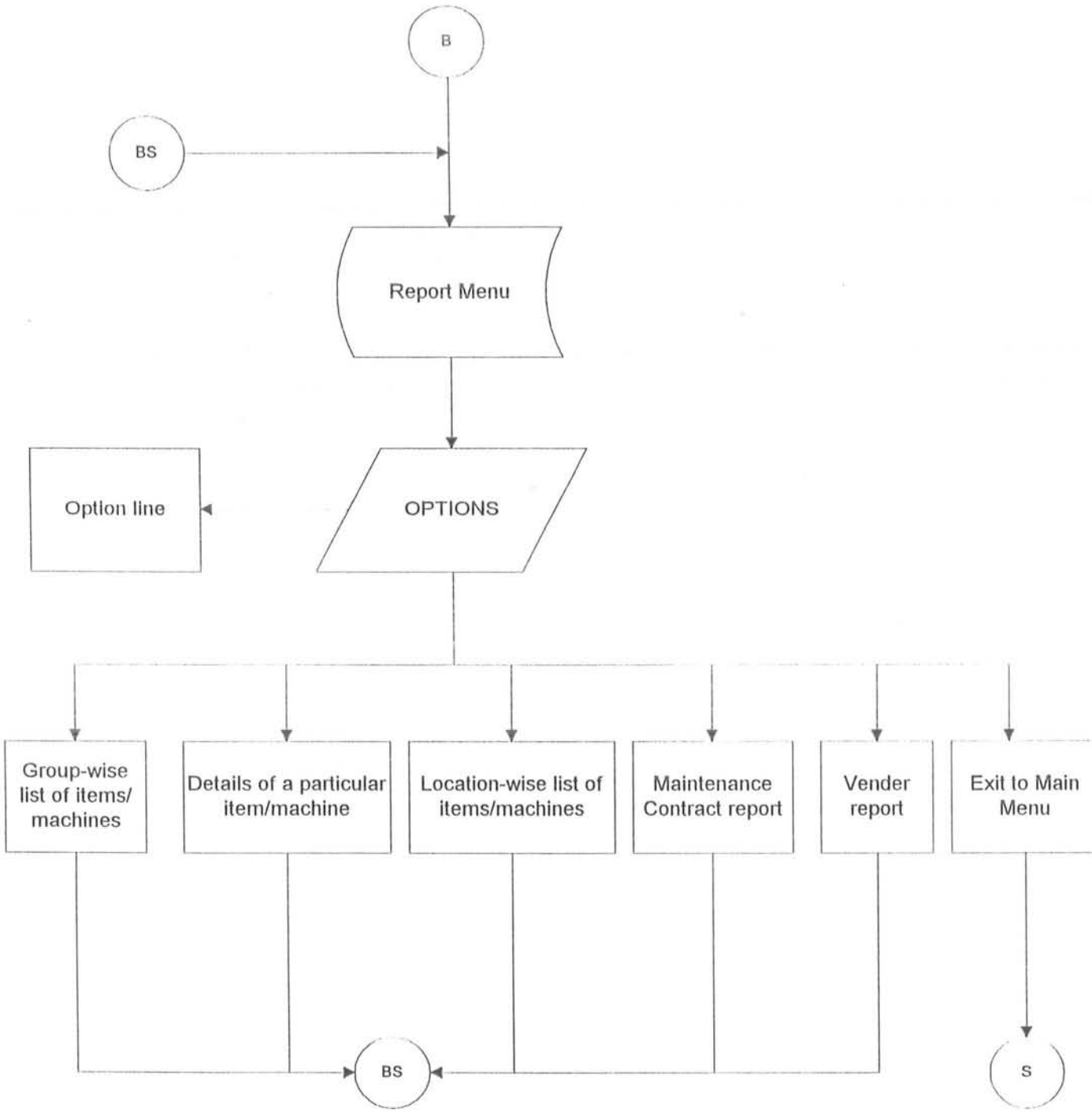

A
AS
Data maintenance Menu
Function Keys
OPTIONS
Addition
Updation
Display
Deletion
Exit to Main Menu
A1
A2
A3
A4
AS

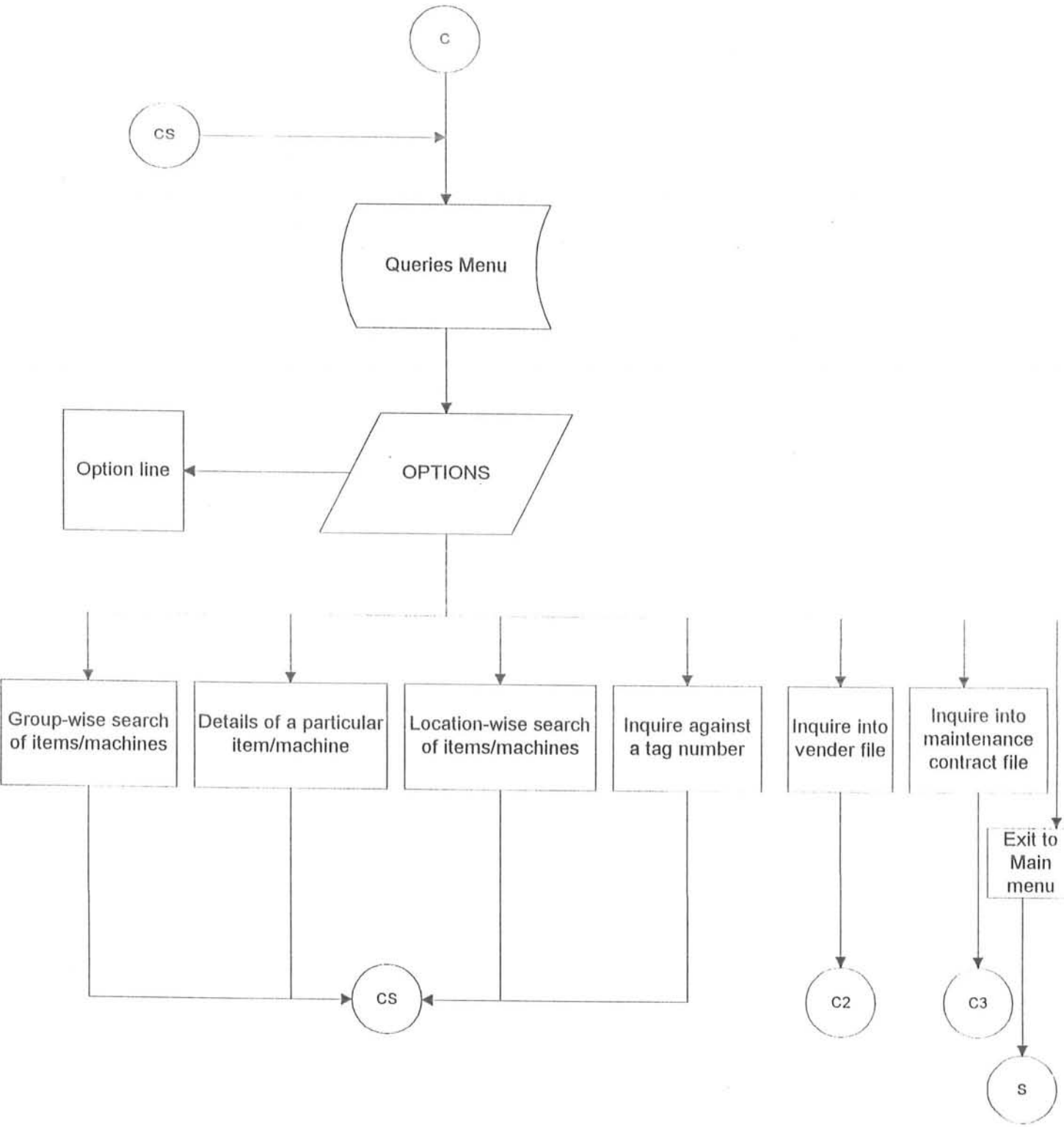

A1
A1S
Addition Menu Screen
Option and Function keys
OPTIONS
Addition of all files
Addition to new location
Maintenance file addition
Vender file addition
Exit to data maintenance menu
A1a
A1b
A1c
A1d
AS
A1S

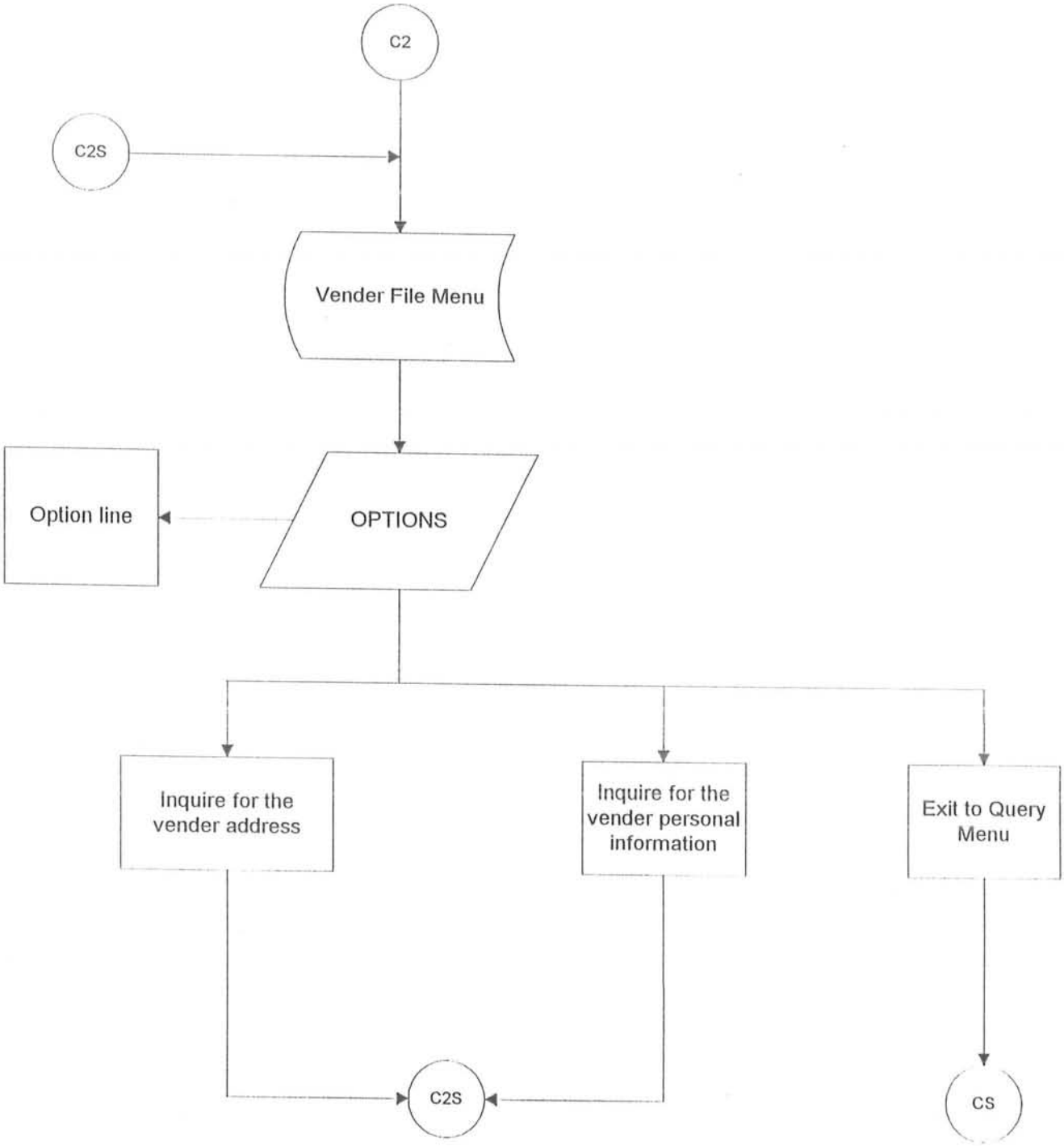

A2
A2S
Updation Menu Screen
Function keys
OPTIONS
Item/machine specifications updation
Location-wise updation
Maintenance contract updation
Vender information updation
Exit to data maintenance menu
A2a
A2b
A2c
A2d
AS
A2S

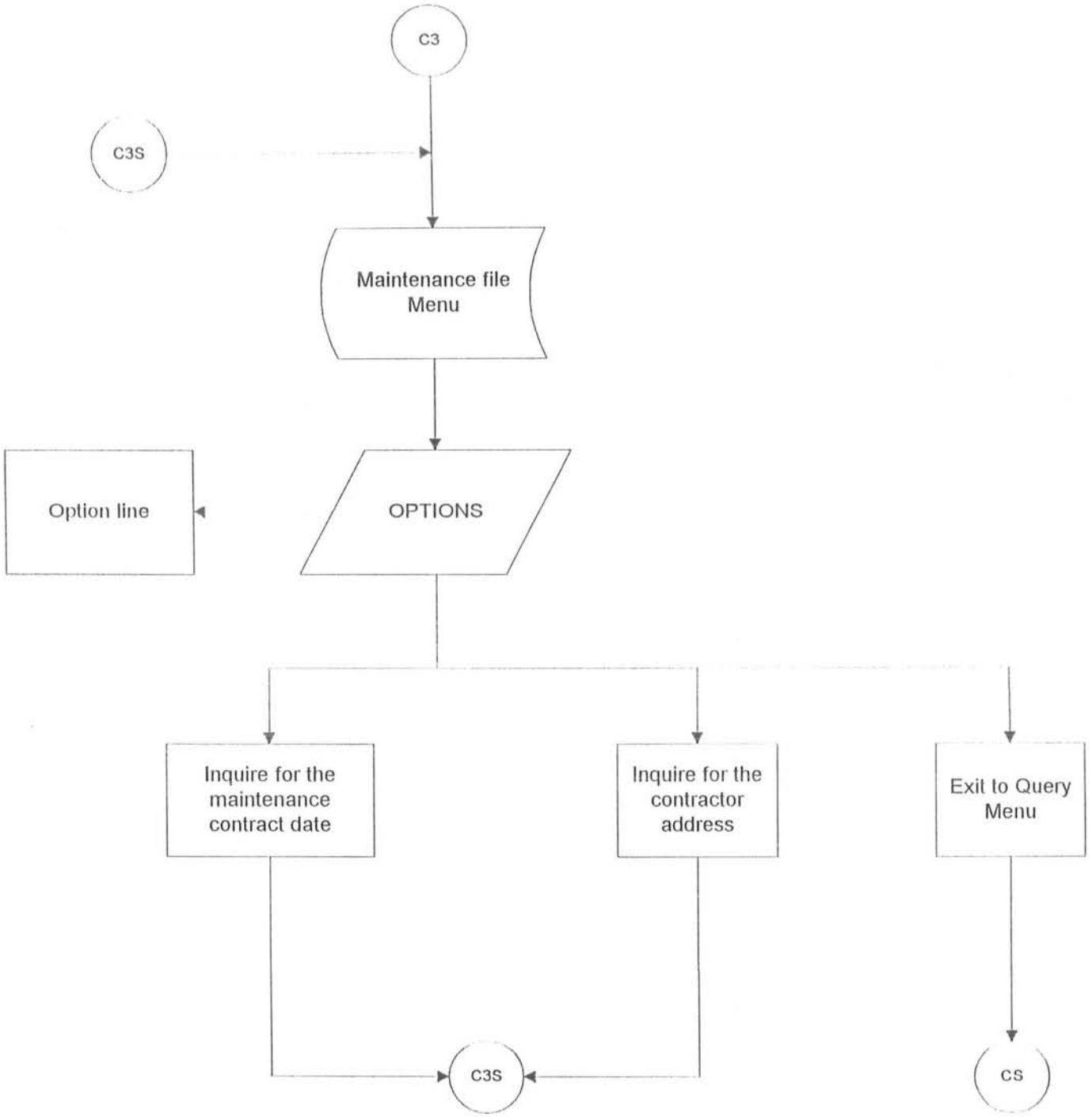

A3
A3S
Display Menu Screen
Function keys
OPTIONS
Item/machine specifications display
Location specifications display
Maintenance contract display
Vender information display
Exit to data maintenance menu
A3a
A3b
A3c
A3d
AS
A3S

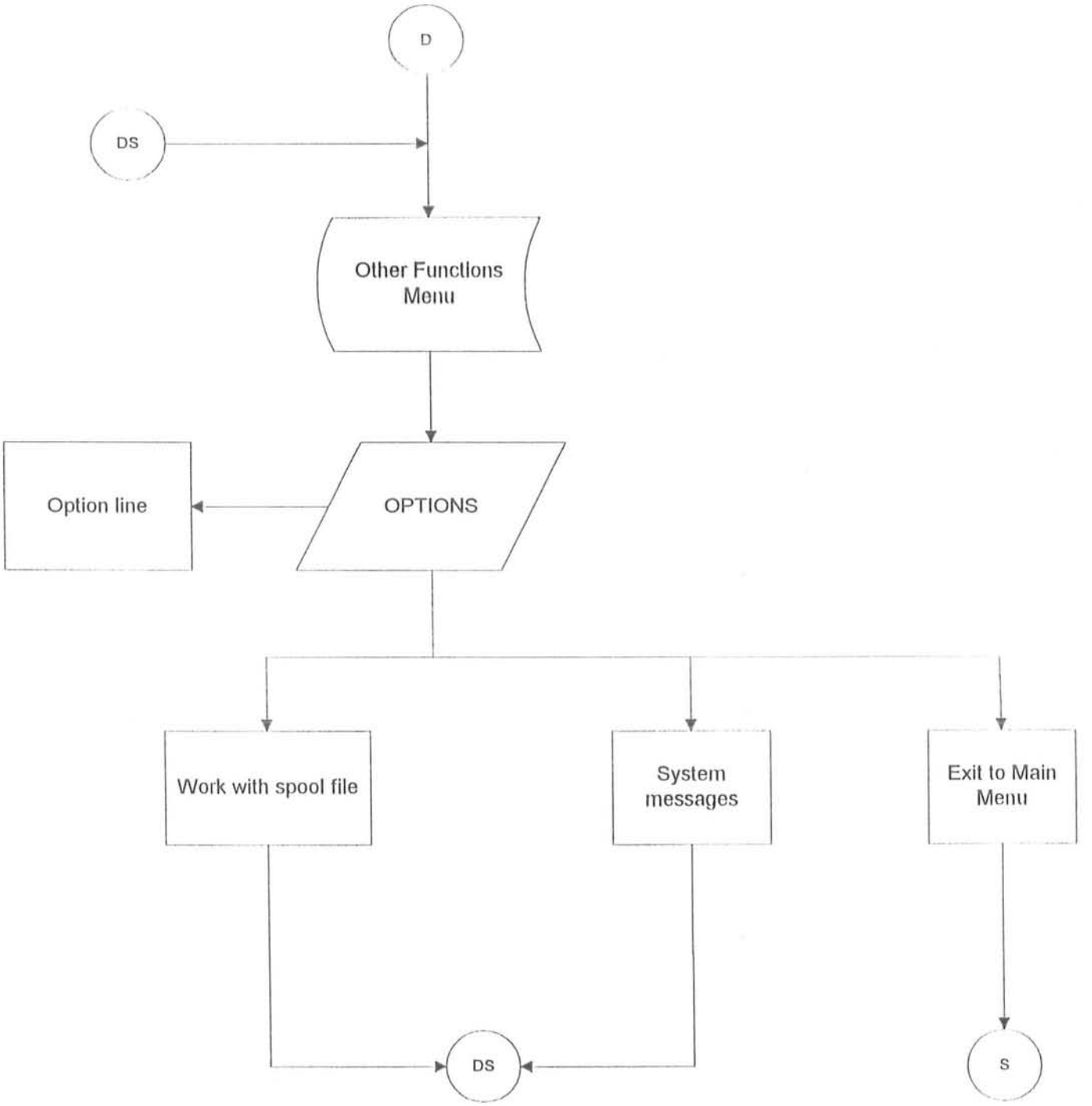

A4
A4S
Deletion Menu Screen
Function keys
OPTIONS
Item/machine specifications deletion
Location specifications deletion
Maintenance contract deletion
Vender information deletion
Exit to data maintenance menu
A4a
A4b
A4c
A4d
AS
A4S


B
BS
Report Menu
Option line
OPTIONS
Group-wise list of items/ machines
Details of a particular item/machine
Location-wise list of items/machines
Maintenance Contract report
Vender report
Exit to Main Menu
BS
S


C
CS
Queries Menu
Option line
OPTIONS
Group-wise search of items/machines
Details of a particular item/machine
Location-wise search of items/machines
Inquire against a tag number
Inquire into vender file
Inquire into maintenance contract file
Exit to Main menu
CS
C2
C3
S


C2
C2S
Vender File Menu
Option line
OPTIONS
Inquire for the vender address
Inquire for the vender personal information
Exit to Query Menu
C2S
CS


C3
C3S
Maintenance file Menu
Option line
OPTIONS
Inquire for the maintenance contract date
Inquire for the contractor address
Exit to Query Menu
C3S
CS

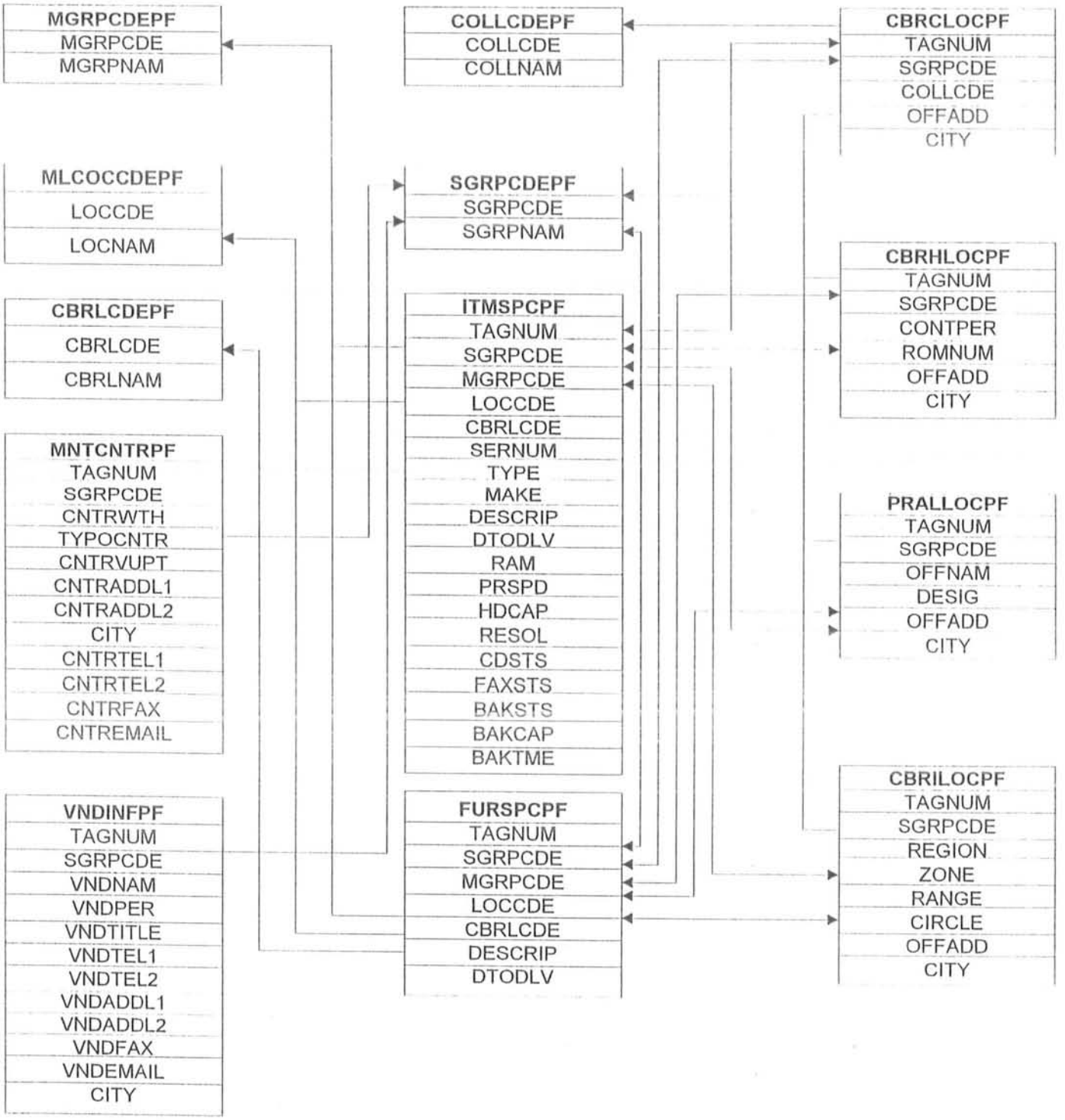

D
DS
Other Functions Menu
Option line
OPTIONS
Work with spool file
System messages
Exit to Main Menu
DS
S

APPENDIX

D

DATA DICTIONARY

SYSTEM DATABASE



GRID CHART

FILES / VARIABLES	CBRCLOCPF	CBRHLOCPF	CBRILOCPF	CBRLOCPF	COLLCDEPF	FURSPCPF	ITMSPCPF	MGRPCDEPF	MLOCCDEPF	MNTCNTRPF	PRALLOCPF	SGRPCDEPF	VNDINFPF
BAKCAP							X						
BAKSTS							X						
BAKTME							X						
CBRLCDE				X		X	X						
CBRLNAM				X									
CDSTS							X						
CIRCLE			X										
CITY	X	X	X							X	X		X
CNTRADDL1										X			
CNTRADDL2										X			
CNTRMAIL										X			
CNTRFAX										X			
CNTRTEL1										X			
CNTRTEL2										X			
CNTRVUPT										X			
CNTRWTH										X			
COLLCDE	X				X								
COLLNAM					X								
DESCRIP						X	X						
DESIG											X		
DTOCNTR										X			
DTODLV						X	X						
FAXSTS							X						
HDCAP							X						
LOCCDE						X	X		X				
LOCNAM									X				
MAKE							X						
MGRPCDE						X	X	X					
MGRPNAM								X					
OFFADD	X	X	X								X		

FILES VARIABLES	CBRCLOCPF	CBRHLOCPF	CBRILOCPF	CBRLOCPF	COLLCDEPF	FURSPCPF	ITMSPCPF	MGRPCDEPF	MLOCCDEPF	MNTCNTRPF	PRALLOCPF	SGRPCDEPF	VNDINFPF
OFFNAM											X		
PRSPD							X						
RAM							X						
RANGE			X										
REGION			X										
RESOL							X						
ROMNUM		X											
SERNUM							X						
SGRPCDE	X	X	X			X	X			X	X	X	X
SGRPNAM												X	
TAGNUM	X	X	X			X	X			X	X		X
TYPE							X						
TYPOCNTR										X			
VNDADDL1													X
VNDADDL2													X
VNDEMAIL													X
VNDFAX													X
VNDNAM													X
VNDPER													X
VNDTEL1													X
VNDTEL2													X
VNDTITLE													X
ZONE			X										

Backup Capacity
BAKCAP
1.2 KVA

Backup unit Ststus
BAKSTS
'Y' = Yes
'N' = No

Backup Time
BAKTME
1.0 HRS

CBR Location Code
CBRLCDE
HQ
CO
CE
IT
ST
DRS

CBR Location Name
CBRLNAM
Headquarters
Collectorate
Central Excise
Income Tax
Sales Tax
DRS

CD Staus
CDSTS
'Y' = Yes
'N' = No

Circle
CIRCLE
01
02

City
CITY
ISLAMABAD
LAHORE
RAWALPINDI

Contractor Address Line1
CNTRADDL1
DIPLOMAT ENCLIVE, NEAR

Contractor Address Line2
CNTRADDL2
GRINDLAYS BANK BUILDING

Contractor E-Mail Address
CNTREMAIL
yousaf@brain.net.pk.

Contractor Fax number
CNTRFAX
92-51-818796

Contractor Telephone number 1
CNTRTEL1
274465-66

Contractor Telephone Number 2
CNTRTEL2
822542

Contract Valid up to Date
CNTRVUPT
1999-07-02

Contract With
CNTRWYH
IBM

Collectorate Code
COLLCDE
GC
FC
RC
PC

Collectorate Name
COLLNAM
Gujranwala Collectorate
Faisalabad Collectorate
RawalpindiCollectorate
Peshawar Collectorate

Description
DESCRIP
LINE PRINTER
LINE INTERACTIVE UPS
ASCII MONITORS

Designation
DESIG
Senior Software Enginer
ASE

Date of Contract
DTOCNTR
1994-07-03

Date of Delivery
DTODLV
1994-07-03

Fax/Modem Card Status
FAXSTS
'Y' = Yes
'N' = No

Hard disk Capacity
HDCAP
1.2 GB

Location Code
LOCCDE
'01' = PRAL
'02' = CBR

Location Name
LOCNAM
PRAL
CBR

Make
MAKE
AKHTAR
AST
IBM

Main Group Code
MGRPCDE
01
02

Main Group Name
MGRPNAM
MICRO COMPUTER
MINI COMPUTER

Office Address
OFFADD
249, ST.4, F-10/3

Officer Name
OFFNAM
SHAHAB

Processing/Printing Speed
PRSPD
1.66 MHZ
1200 LINES/MINUTE

Random Access Memory
RAM
16.0 MB

Range
RANGE
02
03

Region
REGION
01
02

Resolution
RESOL
1024X768

Room Nmber/Section
ROMNUM
15
ACCOUNTS

Serial Number
SERNUM
41 F 0072134
B94042484967

Item/Machine Code
SGRPCDE
'CP' = CPU
'PR' = PRINTER

Item/Machine type
SGRPNAM
CPU
PRINTER
MONITOR
UPS

Tag Number
TAGNUM
001991
000267

Type/Model
TYPE
3151
LC486D-X2-66

Type of Contract
TYPOCNTR
Contract is for two years

Vender Address Line 1
VNDADDL1
52-WEST, KHYBER PLAZA

Vender Address Line2
VNDADDL2
BLUE AREA

Vender E-Mail Address
VNDEMAIL
ikram@brain.net.pk

Vender Fax Number
VNDFAX
92-51-818756

Vender Name
VNDNAM
IBM AKHTAR

Vender Person
VNDPER
M. IKRAM

Vender Telephone number 1
VNDTEL1
274566-68

Vender Telephone Number 2
VNDTEL2
825437

Vender Person Title
VNDTITLE
GENERAL MANAGER

Zone
ZONE
01 02

APPENDIX

E

SYSTEM MENUS & SAMPLE INPUTS

SYSTEM MENUS

Sign on menu

USER ID _____
PASSWORD _____
PROGRAM/PROCEDURE _____
MENU _____
CURRENT LIBRARY _____

MAIN MENU

1. Data maintenance
2. Queries
3. Reports
4. Other Functions

90. Sign off

Selection
===>

F3 = Exit F12 = Cancel
F13 = Information Assistant F16 = AS/400 main menu

QUERIES MENU

1. Details of a particular item/machine
2. Group wise search of items/machines
3. Location wise search of items/machines
4. Inquire into maintenance contract file
5. Inquire into vender file
6. Inquire against a tag number

Selection
===> _____

F3 = Exit F12 = Cancel
F13 = Information Assistant F16 = AS/400 main menu

MAINTENANCE FILE MENU

1. Inquire for the maintenance contract date
2. Inquire for the contractor address

Selection
===> _____

F3 = Exit F12 = Cancel
F13 = Information Assistant F16 = AS/400 main menu

VENDER FILE MENU

1. Inquire for the vender address
2. Inquire for the vender personal information

Selection
===> _____

F3 = Exit F12 = Cancel
F13 = Information Assistant F16 = AS/400 main menu

REPORT MENU

1. Details of a particular item/machine
2. Group wise list of items/machine
3. Location wise list of items/machines
4. Maintenance contract report
5. Vender report

Selection
===> _____

F3 = Exit F12 = Cancel
F13 = Information Assistant F16 = AS/400 main menu

OTHER FUNCTION MENU

1 Work with spool file
2 System messages

OPTION: ——

F3 = Exit

SAMPLE INPUTS / OUTPUTS

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD. DATE: 6/06/98
ENGINEERING AND MAINTENANCE DEPARTMENT PAGE: i

Details of a Particulr Item/Machine

Item/Machine Type: CPU

Tag No.	Location	CBR Location (If any)	Date of Delivery
000275	CBR	SALES TAX	02.03.1996
000277	CBR	SALES TAX	02.03.1996
000278	CBR	SALES TAX	02.03.1996
000282	CBR	CENTRAL EXISE	02.03.1996
000286	CBR	CENTRAL EXISE	02.03.1996
000289	CBR	CENTRAL EXISE	02.03.1996
000291	CBR	CENTRAL EXISE	02.03.1996
002095	PRAL		01.05.1997
002006	PRAL		01.01.1994
001980	PRAL		04.08.1996
001981	PRAL		05.08.1996
002040	CBR	COLLECTORATE	02.07.1997
001995	CBR	INCOME TAX	03.03.1997

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD. DATE: 6/06/98
ENGINEERING AND MAINTENANCE DEPARTMENT PAGE: 1

Details of a Particulr Item/Machine

Item/Machine Type: PRINTER

Tag No.	Location	CBR Location (If any)	Date of Delivery
000279	CBR	SALES TAX	02.03.1996
000281	CBR	SALES TAX	02.03.1996
000296	CBR	SALES TAX	02.03.1996
000283	CBR	CENTRAL EXISE	04.04.1996
000288	CBR	CENTRAL EXISE	04.04.1996
000290	CBR	CENTRAL EXISE	12.04.1996
000293	CBR	CENTRAL EXISE	04.04.1996

Group Wise List of Items/Machines

Group Name: MICRO COMPUTER

Tag No.	Item/Machine Type	Location	CBR Location (If any)
000279	PRINTER	CBR	SALES TAX
000281	PRINTER	CBR	SALES TAX
000296	PRINTER	CBR	SALES TAX
000283	PRINTER	CBR	CENTRAL EXISE
000288	PRINTER	CBR	CENTRAL EXISE
000290	PRINTER	CBR	CENTRAL EXISE
000293	PRINTER	CBR	CENTRAL EXISE
000266	UPS	CBR	SALES TAX
000267	UPS	CBR	SALES TAX
000268	UPS	CBR	SALES TAX
000280	UPS	CBR	SALES TAX
000295	UPS	CBR	SALES TAX
000287	UPS	CBR	CENTRAL EXISE
000294	UPS	CBR	CENTRAL EXISE
000269	STABILIZER	CBR	SALES TAX
000285	STABILIZER	CBR	SALES TAX
000270	STABILIZER	CBR	SALES TAX
000275	CPU	CBR	SALES TAX
000277	CPU	CBR	SALES TAX
000278	CPU	CBR	SALES TAX
000282	CPU	CBR	CENTRAL EXISE
000286	CPU	CBR	CENTRAL EXISE
000289	CPU	CBR	CENTRAL EXISE
000291	CPU	CBR	CENTRAL EXISE
002095	CPU	PRAL	
002095	MOUSE	PRAL	
002095	KEY BOARD	PRAL	
002095	MONITOR	PRAL	
001980	CPU	PRAL	
001980	MONITOR	PRAL	
001980	KEY BOARD	PRAL	
001980	MOUSE	PRAL	
001981	CPU	PRAL	
001981	MONITOR	PRAL	
001995	CPU	CBR	INCOME TAX
001995	MONITOR	CBR	INCOME TAX
001995	KEY BOARD	CBR	INCOME TAX
001995	MOUSE	CBR	INCOME TAX
000271	AIR CONDITIONER	CBR	SALES TAX
000272	AIR CONDITIONER	CBR	SALES TAX
000273	AIR CONDITIONER	CBR	SALES TAX
000274	AIR CONDITIONER	CBR	SALES TAX
000276	AIR CONDITIONER	CBR	SALES TAX
000284	AIR CONDITIONER	CBR	SALES TAX

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD. DATE: 6/06/98
ENGINEERING AND MAINTENANCE DEPARTMENT PAGE: 1

Group Wise List of Items/Machines
Group Name: MINI COMPUTER

Tag No.	Item/Machine Type	Location	CBR Location (If any)
002006	CPU	PRAL	
002010	MONITOR	PRAL	
002010	KEY BOARD	PRAL	
002013	MONITOR	PRAL	
002013	KEY BOARD	PRAL	
002234	MONITOR	PRAL	
002234	KEY BOARD	PRAL	
002014	MONITOR	PRAL	
002014	KEY BOARD	PRAL	
002224	MONITOR	PRAL	
002224	KEY BOARD	PRAL	
002040	CPU	CBR	COLLECTORATE
002040	UPS	CBR	COLLECTORATE
002040	STABILIZER	CBR	COLLECTORATE
002041	MONITOR	CBR	COLLECTORATE
002041	KEY BOARD	CBR	COLLECTORATE
002042	MONITOR	CBR	COLLECTORATE
002042	KEY BOARD	CBR	COLLECTORATE

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENANCE DEPARTMENT
Location wise List of Items

DATE: 6/06/98
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Location: PRAL

Tag No.	Machine Type	Officer Name	Description
001980	CPU	RASHID AKHTAR	PENTIUM
001980	KEY BOARD	RASHID AKHTAR	SKELETEN
001980	MONITOR	RASHID AKHTAR	SVGA MONITOR
001980	MOUSE	RASHID AKHTAR	2-BUTTON MOUSE
001981	CPU	ISMAIL	INTEL PENTIUM PROCESSOR, ADVANTAGE SERIES
001981	MONITOR	ISMAIL	
002006	CPU	SHAHB	AS/400
002010	KEY BOARD	ASIF	SKELETEN
002010	MONITOR	ASIF	ASCII TERMINAL
002013	KEY BOARD	TUFAIL	SKELETEN
002013	MONITOR	TUFAIL	ASCII TERMINAL
002014	KEY BOARD	SHAHB	SKELETEN
002014	MONITOR	SHAHB	ASCII TERMINAL
002095	CPU	TARIQ SULTAN	
002095	KEY BOARD	TARIQ SULTAN	
002095	MONITOR	TARIQ SULTAN	COLORED MONITOR
002095	MOUSE	TARIQ SULTAN	
002224	KEY BOARD	BUSHERA	SKELETEN
002224	MONITOR	BUSHERA	ASCII TERMINAL
002234	KEY BOARD	ZAFAR	SKELETEN
002234	MONITOR	ZAFAR	ASCII TERMINAL

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENANCE DEPARTMENT
Location wise list of items/machines

DATE: 6/06/9
PAGE: 1

Location: CBR

Tag No.	Machine Type	CBR Location	Description
000266	UPS	SALES TAX	
000267	UPS	SALES TAX	
000268	UPS	SALES TAX	
000269	STABILIZER	SALES TAX	
000270	STABILIZER	SALES TAX	
000271	AIR CONDITIONER	SALES TAX	MODEL: AGNUS/GENERAL
000272	AIR CONDITIONER	SALES TAX	MODEL: AGNUS/GENERAL
000273	AIR CONDITIONER	SALES TAX	MODEL: AGNUS GENERAL
000274	AIR CONDITIONER	SALES TAX	MODEL: AGNUS/GENERAL
000275	CPU	SALES TAX	
000276	AIR CONDITIONER	SALES TAX	MODEL: AGNUS/GENERAL
000277	CPU	SALES TAX	
000278	CPU	SALES TAX	
000279	PRINTER	SALES TAX	COLOR INKJET
000280	UPS	SALES TAX	
000281	PRINTER	SALES TAX	INKJET PRINTER
000282	CPU	CENTRAL EXISE	
000283	PRINTER	CENTRAL EXISE	INKJET PRINTER
000284	AIR CONDITIONER	SALES TAX	MODEL: AGNUS/GENERAL
000285	STABILIZER	SALES TAX	
000286	CPU	CENTRAL EXISE	
000287	UPS	CENTRAL EXISE	
000288	PRINTER	CENTRAL EXISE	INKJET PRINTER
000289	CPU	CENTRAL EXISE	
000290	PRINTER	CENTRAL EXISE	INKJET PRINTER
000291	CPU	CENTRAL EXISE	
000293	PRINTER	CENTRAL EXISE	INKJET PRINTER
000294	UPS	CENTRAL EXISE	
000295	UPS	SALES TAX	
000296	PRINTER	SALES TAX	INKJET PRINTER
002040	CPU	COLLECTORATE	AS/400
002040	STABILIZER	COLLECTORATE	
002040	UPS	COLLECTORATE	
002041	KEY BOARD	COLLECTORATE	SKELETEN
002041	MONITOR	COLLECTORATE	TWIN AXEL
002042	KEY BOARD	COLLECTORATE	SKELETEN
002042	MONITOR	COLLECTORATE	TWIN AXIL
001995	CPU	INCOME TAX	
001995	KEY BOARD	INCOME TAX	SKELETEN
001995	MONITOR	INCOME TAX	SVGA
001995	MOUSE	INCOME TAX	2-BUTTON

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENANCE DEPARTMENT
Vender Report

Tag No.	Machine Type	Vender Name	Vender Address	City
000275	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD
000277	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD
000278	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD
000282	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD
000286	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD
000289	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD
000291	CPU	AKHTAR COMPUTERS	52-WEST KHYBER PLAZA FAZAL-E-HAQ ROAD, BLUE AREA	ISLAMABAD

PAKISTAN REVENUE AUTOMATION (Pvt.) LTD.
ENGINEERING AND MAINTENANCE DEPARTMENT
Maintenance Contract Report

DATE: 6/06/98
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Tag No.	Machine Type	Contractor Name	Date of Contract	Contract valid up to
002040	CPU	IBM	03.07.1997	03.07.2000
002041	KEY BOARD	IBM	03.07.1997	03.07.2000
002041	MONITOR	IBM	03.07.1997	03.07.2000
002042	KEY BOARD	IBM	03.07.1997	03.07.2000
002042	MONITOR	IBM	03.07.1997	03.07.2000

APPENDIX

F

REFERENCES

REFERENCES

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