

**COMPUTERISATION OF VISA-CARRYING
PASSENGERS (VCP) ARRIVING/DEPARTING
NIGERIA'S AIRPORT (CONTROL POST)**

BY

ADAMU LATIR MUSA
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CERTIFICATION

This is to Certify that this Research project was carried out by **Mr. ADAMU LATIR MUSA** of Post Graduate Diploma Program in Mathematics/Computer Science Department of Federal University of Technology, Minna.

Approved by:-

PROF. K. R. ADEBOYE
PROJECT SUPERVISOR

DATE

DR. S. A. REJU
HEAD OF DEPARTMENT

DATE

EXTERNAL EXAMINER

DATE

DEDICATION

This piece of work is dedicated to my wife, Fatima N. Musa and the children, Musa and Ibrahim. They were very patient and understanding during the period of this programme.

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A. L. Musa

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ABSTRACT

The Nigeria Immigration Service has been operating on a manual system of recording the information of Passengers arriving or departing the country. The form format containing all passengers information is filled and returned to data room for the storage and retrieval of passengers information when the need arises. Dates of arrival/departure of passengers were used as reference.

This project provides a more viable and reliable computerized system which will assist in achieving good record keeping and decision making by the service. Problems associated with the present system will cease to exist and the integrity and security of passengers data can be achieved as only those that are permitted can have access to the records.

CHAPTER ONE

USE OF COMPUTER IN DOCUMENTING ARRIVING PASSENGERS INTO NIGERIA

1.1 INTRODUCTION

For any passenger arriving the Nigeria entry point-which could either be airport, sea port or land frontier, it is required of him or her to carry a valid visa in his or her travel document in the case of an alien, or a valid entry permit for a citizen of a Commonwealth country or nothing at all if the passenger falls within the West African sub-region. For the clarity of this project, the following terms need to be explained.

1.1.1 Visa

A valid visa as defined by the Immigration Act means: "An impress or ink endorsement by any means on a travel document or passport purporting to be signed by or on behalf of the Government of Nigeria subject to compliance with any special requirements prescribed by the Immigration Authorities at the port of entry and valid for specified time and for the number of journeys slated therein."

This visa system is designed in such a way to assist the Immigration Authorities in the proper administration of the regulations regarding the entry of aliens into Nigeria.

1.1.2 Visa Types

There are three types of visas:-

*** ORDINARY VISA**

- (a) **Transit Visa**:- this is issued to aliens to enable them pass through Nigeria enroute to a further destination.
- (b) **Single Journey Visa**:- valid for a single entry into Nigeria.
- (c) **Multiple Journey Visa**:- a visa issued and made valid for any number of journeys stated to and from Nigeria for a period of validity not exceeding twelve months.

*** DIPLOMATIC VISA**

This is issued only to Head of Missions. No fees are charged and it is granted only by Nigeria Mission abroad. It has no duration.

*** GRATIS OR COURTESY VISA**

This is issued to those persons who do not qualify for diplomatic visa but who are foreign government officials travelling on official business. No fees are charged.

1.1.3 Entry Permit

This has the same definition as a visa. The only difference is that while visa applies to aliens, entry permit applies only to citizens of Commonwealth countries. This entry permit is issued gratis. For the purpose of this project,

the two categories of passengers - either coming into Nigeria with a visa or entry permit - will generally be regarded as visa-carrying passengers, this is because they fill the same type of forms on arriving or departing the country. The difference is only indicated on the authority code used on the reverse side of the card when stamped.

1.2 THE VISA - CARRYING PASSENGER (VCP)

Visa-carrying passengers (VCP) make up part of the statistical returns of passengers who arrived or departed the country for the year. Such information gives an insight into the number of immigrants that have visited the country and serves as a guide for business and tourists industries to expand their business or tourists attractions.

The present system being used to generate information for VCP by the Nigerian Immigration Service is purely manual. It employs the use of file jackets and registers to store passengers data. It is relatively very slow, cumbersome and labourious and poses other problems which can make information generation from such stored data unreliable. Such problems may include:-

- (a) Passengers Security information may easily be revealed to other security outfit at the port of entry as such files and registers containing the information move from counters to office and finally to data room - store.
- (b) Duplication of information of passengers can occur in the files and registers especially where there is pressure on the officers at the counter to clear passengers and close for the shift.

- (c) **Storage:** where data duplication takes place, it creates big storage problem which at long run will mean waste of resources.
- (d) **Labour:** As the present system is manual in nature, more personnels are required to manage and maintain the system.
- (e) **Data integrity:** This can be achieved where changes in data collection are not made and where they are made problems come up as the need for the development of another information will arise.

This system thus, calls for the need for the computerisation of the VCP arriving the country at entry points. It will provide for the storage of all passengers information to be stored on computer files and data banks to replace the files and registers kept at the entry points. By this, the system will go a long way in improving the speed and efficiency of the data collection, storage, manipulation, reporting and disseminating passengers information to various sections of the service which are in need of such information and other sister-security organisations like the State Security Service, National Drug Law Enforcement Authority, the Nigeria Police Force and the Nigeria Customs Service. The generation of needed passengers data is one thing and the right timing of the production of such information is another. The computer is fast and can handle huge amount of data and also produce reports within a very short time, which means that computer can produce information needed for an immediate decision taking.

With the introduction of this system, there will be a total change in the orientation of the service in the aspect of passengers data storage and decision making.

1.3 LITERATURE REVIEW

A computerised VCP information system at the country's entry point can be defined as a computer based information system which is designed to support the operational section of the Nigeria Immigration Service, aid the managerial section as well as assist in decision making of the entire organisation.

It is also simply clear that this system will go a long way to assist other organisations with relevant information concerning all visitors arriving the country.

1.4 REQUIREMENT OF THE VCP

The effectiveness of any system always depends on a number of certain basic requirements which are met to serve the purpose they are meant for. For this project the requirements stipulates that:-

- a) It must be an on-line system
- b) It must provide adequate data security
- c) The new system must be a flexible one
- d) It should be easy to use
- e) It must provide an effective report generator or query language
- f) The data must be easily accessible as at when needed
- g) The system must be able to display all meaningful information in a systematic manner possible.

- h) The system must be more on VDU rather than on paper.

1.5 THE RECOMMENDED APPROACH

The recommended approach of the computerised Visa-Carrying Passengers System is that which can best suit the organisation and this can best be determined by:-

- a) the nature of the organisation
- b) the structural organisation of the service
- c) the most recent system of development in the organisation.

CHAPTER TWO

AN INDEPTH STUDY OF THE PROJECT

2.1 FEASIBILITY STUDY

When a problem is identified, the next steps are to consider the approaches that can be used to solve the problem. Where the best approach is selected, a feasibility study is thus conducted. This will no doubt aid in generating more important information on the following:-

1. why a computerised system is required as a replacement for the present system being used by the service.
2. the scope of the new system
3. data requirements
4. the benefits to be derived.

2.2 COST-BENEFIT ANALYSIS

A cost-benefit analysis of any project is necessary. This is done in order to determine the economic feasibility of the project. This is to help in finding out whether the project is economically viable to invest in or not. While some benefits can be quantified in terms of monetary value, others can only be quantified in terms of:-

1. good management information;
2. service that is effective;
3. attainment of excellence for the Nigeria Immigration Service;
4. storage, retrieval and access to data;

5. the ability of the system to accommodate the rate of growth of passengers arriving or departing the country;
6. duplication of information on passengers and time wastage eradication.

2.2.1 Cost

This refers to the amount expendable on the system including its total implementation. All this depends on the type of hardware selected and the complexity of the software which are going to be used to run the entire system.

Equipment Cost

This refers to the capital cost of computers and peripheral devices such as modems, data lines, VDU, printers and cabling for installation.

Installation Cost

New building has to be acquired or an old one needs to be renovated to house the computers. Also electrical works need to be undertaken for power supply.

Developing Cost

This involves software consultancy cost of package, modification and system software utilities.

Personnel Cost

This could be seen as implementation cost as it involves cost of staff training as well as staff salaries, allowances, pensions and gratuities.

Operating Cost

This is a cost which is continuous in nature and it includes hardware maintenance, accommodation cost, insurance, power supply and telephone cost and consumable materials cost for example disk packs, diskettes, disk drives, stationeries, printer ribbons.

2.2.2 Benefits

The system when in place will highly be beneficial to the service as it will handle the recording of a large number of passengers arriving or departing the country with no duplication of names and also eliminate the high congestion of staff at the airports departure and arrival halls.

COST BENEFITS

Initial Cost

| | |
|-------------------------------------------|--------------------|
| Hardware Cost | ₦170,000.00 |
| Passengers Package (application Software) | ₦30,000.00 |
| System Software | ₦80,000.00 |
| Installation Cost | ₦50,000.00 |
| Implementation Cost | ₦40,000.00 |
| TOTAL INITIAL COST | ₦370,000.00 |

From the above figure, the service needs two sets - for arrival and departure halls thus, bringing the sum total of initial cost to ₦740,000.00.

The following expenses are estimated to be incurred at the end of each year:-

| | |
|---------------------------|--------------------|
| Hardware maintenance | ₦60,000.00 |
| Software | ₦30,000.00 |
| Consumable | ₦40,000.00 |
| Software licenses | ₦10,000.00 |
| TOTAL INITIAL COST | ₦140,000.00 |

Annual Savings

| | |
|--------------------------------------------------------------------|---------------|
| 35 Staff - Basic Salary | ₦1,602,264.00 |
| Initial Cost | ₦740,000.00 |
| Annual Expenses/Charges to be incurred | ₦140,000.00 |
| Annual Basic Salary for 14 Staff to be used to man the Machines | ₦179,994.00 |

The projected staff basic salary to be saved in the first year of computerisation = ₦542,270.00. This does not include the cost of materials and stationery that are used in the present system.

2.3 SCOPE OF THE SYSTEM

The scope of the visa-carrying-passenger (VCP) may generate diverse views and attraction from system analysts and users, but for the purpose of this project the scope of what the system could do is purely recording of visa-carrying passengers arriving or departing Nigeria's entry points (airports and land frontiers) and how significant such data could be to the service, other security organisations of the

country and other government agencies for example tourism board for the development of tourists attractions in the country.

2.4 APPROACHES AVAILABLE

There are various approaches that are available from which one has the option to choose which system best suites his organisation. These include:-

2.4.1 Micro Computer

Micro-computer is currently the most available and least expensive system. It needs little expertise to operate it. The primary storage unit is usually smaller than that of other computers.

Micro computers of recent have gained popularity because large number of software packages have been developed for wide variety of applications in business and educational organisations.

2.4.2 Mini Computer

This computer has many of the capabilities of a mainframe but with a smaller primary storage unit. It processes data more slowly than mainframe and can also store and retrieve data from the same types of input and output devices as mainframes.

Mini computers are less expensive and have more software packages that can run on them more than on micro or mainframes - computers. This implies that a medium size organisation will find mini computers more attractive especially with a suitable package than other computers.

2.4.3 Mainframes

These are computers that have large memory capacities and very powerful. They operate on high speed. They solve highly sophisticated problems thus making them very expensive. They are commonly used in big organisations such as banks, and industries.

2.4.4 Bureaux

As at the time it was expensive to install in-house computers, bureaux was developed to provide cheap services to organisations. With the prices of mini and micro computers becoming low and performance being improved, this bureaux is being phased out.

Bureaux has the advantages of large file handling and large volummes of printed output when batch processing are involved.

It has responded to dynamic technology offering an on-line data input as against the batch service.

The Nigeria Immigration Service through this Visa-Carrying-Passengers computerisation stands to enjoy the following services of the bureaux:-

- * custom-built system
- * access to passengers' nationality package
- * access to passengers' visa categories package
- * access to passengers' number/volume of traffic.

As the Nigeria Immigration Service (NIS) has no experience of computer based system at the point of entry, this method may be seen as a medium term or first step of computerisation.

2.5 CONDUCTING PROJECT FEASIBILITY

For any meaningful decision to be made by an organisation, there is always the need for a feasibility study, thus, for this project such a study was carried out. This study examined the problems existing within the current procedures of clearing visa-carrying-passengers arriving/departing the country's entry points. This study also helps in determining the extent to which the computerisation of VCP can solve the problems associated with the existing system.

Various methods are used to obtain data for every feasibility study that is carried out.

With regards to this project, the following were used:-

*** *Records Review***

Records as to how visa-carrying-passengers (VCP) are kept were investigated at one of the entry points - Kano Airport. Registers are kept for all passengers arriving and departing the country. Passengers' manifest are also kept in files.

The organisational chart of the airport was examined. This was done to identify how the three shifts relate in coalition of the passengers' data.

* *Interview*

The three heads of the shifts were interviewed so as to obtain any additional information on how the existing system is faring and what the proposed system is expected to do or improve upon.

* *Questionnaire*

This mode of obtaining information was used on the operational staff. It was used to help in ascertaining and providing valid information which was used to influence the design of the new system.

* This tool of obtaining information had greatly aided in complimenting the earlier tools mentioned. The experience of the researcher at the land entry point (for years) and also at the airport was an added advantage in information generation for this project.

2.5.1 Testing Project Feasibility

To ascertain the project feasibility the following tests were undertaken:-

a. *Operational feasibility*

A study of the information gathered from the various tools used in conducting the study was carried out to see how workable the proposed system would be. It was found to receive support from the different shifts. Very effective, high efficiency and performance was what the study revealed.

b. Technical feasibility

This examined how the new system would be maintained with few available staff that could be used in the implementation stage.

c. Financial feasibility

From the cost benefit analysis earlier done in this chapter, it was clear that benefits can be derived from the implementation of this project in the organisation. Having examined the cost implication of the proposed system, the service is capable of financing the project.

2.6 CONCLUSION

From all the analysis of the three tests, it should be seen that the proposed project can be taken to have passed the tests and thus the project is highly feasible.

CHAPTER THREE

THE PRESENT SYSTEM OF CLEARING VISA-CARRYING-PASSENGERS ARRIVING NIGERIA

3.1 ANALYSIS OF THE EXISTING SYSTEM

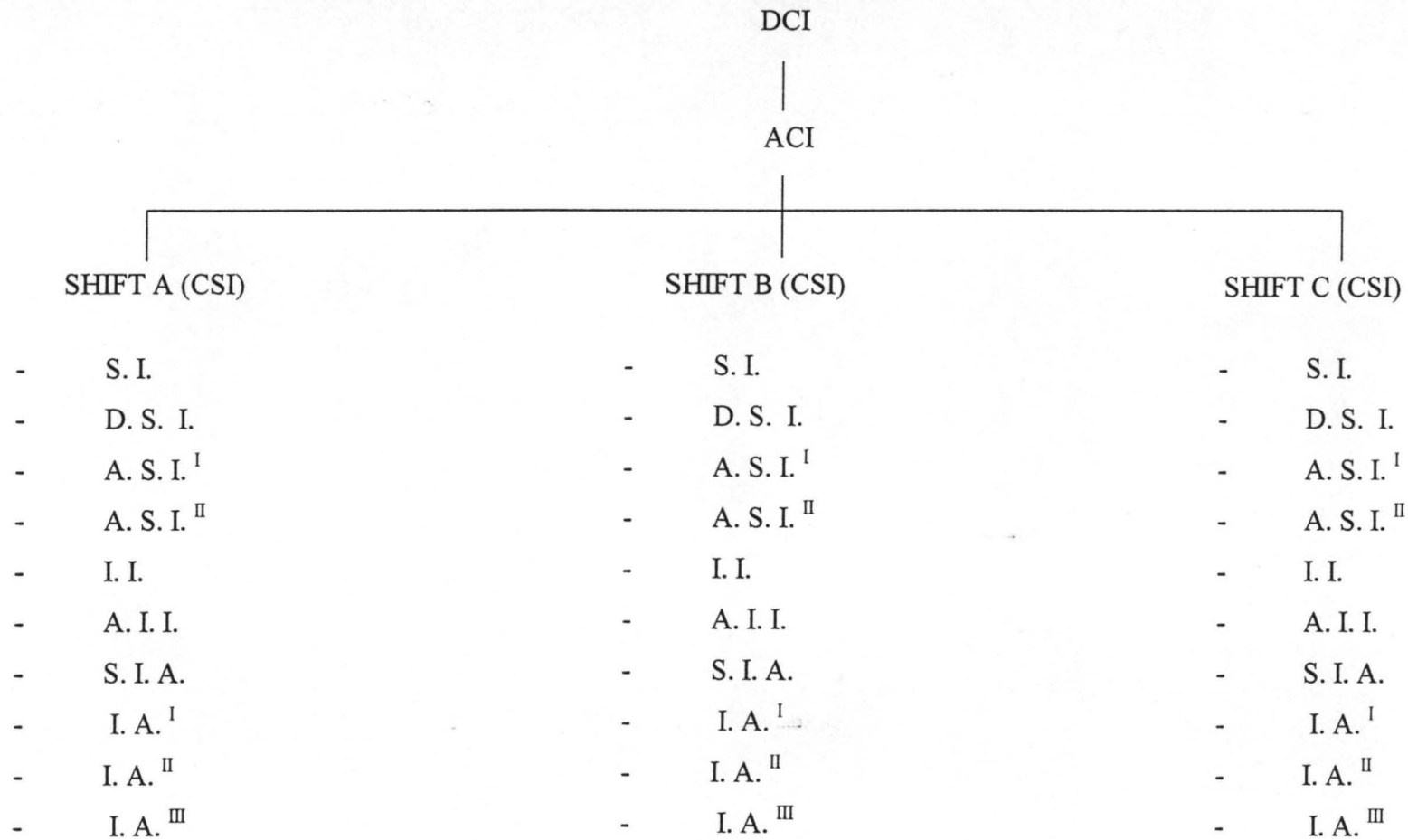
For the new system to be designed, there is the need for the present system to be analysed. The analysis will examine the following Points:

- 1 the hierarchical order of staff of the Control Post
- 2 the various units or Sections of the Control Post
- 3 the duties carried out by the units.

3.1.1 Hierarchical Order of Staff

In all approved entry point/control Post whether land frontiers, Seaports or International Airport-the least rank that heads the post is a Deputy Comptroller of Immigration (D.C.I) who is referred to as the Officer-In-Charge. He is being assisted by an Assistant Comptroller of Immigration (A. C. I.) while the rest of the officers from Chief Superintendent of Immigration (CSI) head the three shifts, follow this stratification illustrated below:-

ORGANISATIONAL CHART OF THE AIRPORT



3.1.2 The Units or Sections of the Control Post

For ease of work at the Control Post, four units or sections are recognised and these are:-

- 1) The administrative Section
- 2) The Operational Section
- 3) The Statistical Section
- 4) The Beat-duty Section

The Officer-In-Charge oversees all the activities of the sections, which are interwoven in all the three shifts.

3.1.3 The Duties Carried Out at the Various Units of the Control Post

A. The Administrative Section:- This Section takes care of posting of new staff to the various shifts.

- * Records of individual staff and other sections are kept here.
- * It is shouldered with the responsibilities of approving casual and annual leave to all officers of the control post.
- * It communicates with the Headquarters at Abuja concerning all issues of officers and that of passengers returns.

B. The Operational Section-The bulk of the work done in any control post is carried out by the operational section. It is this unit that comes into contact with all VCP arriving or departing the country. The duties undertaken by this unit are given below:-

1. **The Aircraft's Passenger and cabin crew Manifest:** On arrival at the control post, the aircraft crew head submits the list of passengers and those of the cabin crew to the Headshift. This list is used to assist in clearing the passengers from the suspect index as they forward to present their passports before the counter staff.
2. **The Suspect Index:-** This is a file that contains all names of passengers of dubious characters and instructions as to what to be done to them if their names are found in it.
3. **Arrival/ Departure form:-** Having been cleared from the suspect index file, the passenger is given a form to fill. The form format can be classified according to the data requirements as follows:
 - Personal Data
 - The Passport Data
 - The Visa Data
4. **Stamp Endorsement:-** Once the forms have been properly filled a verbal interview is being conducted to determine his/her reasons for entry into the country and the need for the required period of stay as specified by the visa endorsed on the passengers' passport.

Where the Headshift is satisfied the 'visitors pass stamp' is endorsed on the passport of the passengers specifying period of stay in the country. The period of stay in the country depends on the following:-

- Validity of the passport

- Validity of the visa endorsement
- Evidence of visible means of livelihood means of support while in the country.
- A return ticket for an onward journey from the country.

5. **Refused entry:-** Where a passenger is refused entry such a person goes back with the same aircraft that brings him. Reasons for refuse entry include:-

- the name of the passenger found in Suspect Index.
- arriving the control post with no visa endorsement in this passport while his country has no visa abolition treaty with Nigeria.
- arriving the control post with no visible means of livelihood of support.
- No return ticket to his home country or an onward journey to another country.

c. **The statistical section:-** This section deals with the transfer of passengers data as contained on their forms to a book register both for arriving and departing passengers. The aircraft cabin crew and the passengers manifest are kept in files.

At the end of every month the Officer-In- Charge orders the production of all passengers that arrived or departed the country and those refused entry. This is in addition to the daily and weekly ones done. The statistical returns are classified as follows:-

- Returns of passengers embarking Nigeria by Immigration classification.
- Returns of passengers disembarking Nigeria by Immigration

classification here means specifying the passengers according to their visas:-

A - Residence

B - Dependant

F - Visitor

G - Transit

G. O. - Government Official

DIP - Diplomat

This is Contained on form 1 mm/47.

- Returns of passengers embarking Nigeria by Nationality classification.
- Returns of Passengers disembarking Nigeria by Nationality classification .
- Returns of passengers refused entry.

D. **The Beat - Duty Section:-** This Section Comprises Purely the junior Cadre Officers who are only detailed to guard the administrative block of the control post, the Screening Center, Data room and to see to the maintaining of queues by passengers when they are being cleared.

3.2 LIMITATIONS OF THE SYSTEM

From the time a passenger arrives a Control post to the time he leaves, the operational section seems to be the most recognised by the passenger. With careful study of this section, the existing system of clearing VCP is analysed but not without some limitations which are explained below:-

3.2.1 Misplaced Registers and Files

Registers containing passengers name are sometimes misplaced, so also files carrying the passengers manifest with those of the cabin crew. Files carrying filled forms of passengers are sometimes misplaced leading to the lost of forms. Such registers or files are only seen later thus delaying work on such items.

3.2.2 Capability

The performance of the existing system does not meet up with the high expectation as required by the service.

An up-to-date record of Passengers issued 'Visitors Pass' and record of their temporary place of residence is hardly confirmed to be true or not. The end result is the possibility of the passenger overstaying his stay in the country and in some cases becoming a public charge.

2.3.3 Duplication

The pressure of work especially where passengers are arriving and the A-shift is about to close for work for the day, the rushing to clear such passengers gives room to duplication of names of such persons in the register.

3.2.4 Accessibility to VCP Data

Timely information when required on a VCP to accomplish an immediate assignment which may be directed by the Headquarters, may not be easily accessible because of the nature of record keeping which makes tracing such data cumbersome.

3.2.5 Economy:-

The economical aspect-cost and benefit analysis of the new system has revealed a significant cost saving benefit particularly in the long term, thus making the new system more economical than the existing system.

3.2.6 Flexibility

With the Federal Government current economic moves to attract foreign investment into the country, this means increase in influx of foreigners into the country and therefore making the present System more difficult and calling for a new System of VCP to cope with the situation.

3.3 REQUIREMENT SPECIFICATION OF THE NEW SYSTEM

This defines Simply in clear terms what exactly the new system is required to do.

These definitions include:-

3.3.1 Security

The use of password here allows for the viewing of records of some few passengers' visa type and this can be done by only the most Senior staff. This is to guide against updating or extending the duration of stay of passengers without the knowledge of the Officer - In - Charge of the Control post.

3.3.2 Flexibility

It is expected that the influx of passengers will grow and to cope with this growth, the creation of additional data fields must be made or provision for such should be made possible.

3.3.3 Speed and Response time

A greater Speed and time response go with the new system than the manual system. The result of this is greater achievement of work done within a short time and better recognition and appreciation of work done by the public.

3.3.4 Availability of Query Language

A very good query language should be part of a computerized VCP entering/departing Nigeria. This application system provides means of setting up and maintaining basic data within the system. It allows for the retrieval of information.

3.3.5 Support

This should come from the supplier of the new system from within or outside the service. The kind of resources that can be provided for such support must be for the three stages of the system.

- * Development stage
- * Implementation stage
- * Operational stage

3.3.6 Storage

It is expected that the new system will have a storage device capable of coping with the anticipated growth of influx of passengers into the country.

3.3.7 Accuracy

The new system is expected to be error-free in all its operational aspects. Where mistakes are identified in the data produced it might be as a result of incorrect data input or fed into the system.

CHAPTER FOUR

DESIGNING A NEW SYSTEM FOR CLEARING VCP

ARRIVING\DEPARTING NIGERIA

4.1 NEW SYSTEM DESIGN

To design a new system some very important objectives need to be Considered and these are:-

- a) *High Performance*- this is very essential so as to meet up with the present work load.
- b) *Flexibility*- this allows for growth of influx of passengers.
- c) Optimum use of equipment.

4.1.1 Input\Output Specification

This concerns the data items of the VCP as recorded at the control Post. This is identified as name sets.

- 1) Surname, Other names, Form No, Sex, Marital status, Date of birth, Country of birth, Nationality, Occupation, Name of employers, Address of employers, Address in Nigeria/Overseas, Reason of entry.
- 2) Passport number, Place of issue, Date of issue and Date of expiration.
- 3) Visa type, Visa number, Place of issue, Date of issue, Duration of visa.

4.1.2 Relationship Between the Name Sets

The Initial name set identifies the VCP to be his/her name with other names, the remaining name sets provide the important data information that can only relate to the VCP whose name surfaces on the name sets.

The relationship makes it possible for an information concerning a single VCP to be retrieved for the purpose of making amendment. This also means that data pertaining to a particular VCP cannot be swapped with another person's own.

4.1.3 Unique Name Sets

The key field to which every name set is tied is provided by unique names set. It also provides the mean of seeing through a VCP information. Form number can be used as the key field for VCP to avoid coincidence of duplication of names.

4.1.4 Normalized Files

A process of Separating item which are independent of one another into groups for recording into different files is called normalization. For the purpose of this project a designed normalized files will consist of the following element and form in the tables below:-

VCP DATA

| SURNAME | OTHER NAMES | SEX | MARITAL STATUS | DATE OF BIRTH |
|----------------|--------------------|------------|-----------------------|----------------------|
| | | | | |

- i. Surname
- ii. Other names
- iii. Form no
- iv. Sex
- v. Marital Status
- vi. Date of Birth
- vii. Country of Birth
- viii. Nationality
- ix. Occupation
- x. Name of Employers
- xi. Address of Employers
- xii. Address in Nigeria
- xiii. Reasons for entry

PASSPORT DATA

| PASSPORT NUMBER | PLACE OF ISSUE | DATE OF ISSUE | DATE OF EXPIRATION |
|------------------------|-----------------------|----------------------|---------------------------|
| | | | |

- i. Passport Number
- ii. Passport place of Issue
- iii. Passport Date of Issue
- iv. Passport Date of Expiration

VISA DATA

| VISA TYPE | VISA NUMBER | PLACE OF ISSUE | DATE OF ISSUE | DURATION OF VISA |
|-----------|-------------|----------------|---------------|------------------|
| | | | | |

- i. Visa type
- ii. Visa Number
- iii. Place of issue
- iv. Date of issue
- v. Duration of visa

4.1.5 The Database Structure

| S/No | FIELD NAME | TYPE | WIDTH | DECIMAL PLACES |
|------|----------------------------|------|-------|----------------|
| 1. | Surname | C | 30 | - |
| 2. | Other Names | C | 30 | - |
| 3. | Form Number | N | 10 | - |
| 4. | Sex | C | 1 | - |
| 5. | Marital Status | C | 1 | - |
| 6. | Date of Birth | D | 8 | - |
| 7. | Country of Birth | C | 25 | - |
| 8. | Nationality | C | 25 | - |
| 9. | Occupation | C | 20 | - |
| 10. | Name of Employers | C | 25 | - |
| 11. | Address of Employer | C | 30 | - |
| 12. | Address in Nigeria | C | 30 | - |
| 13. | Reasons for Entry | C | 20 | - |
| 14. | Passport No. | N | 8 | - |
| 15. | Passport Place of Issue | C | 25 | - |
| 16. | Paasport Date of Issue | D | 8 | - |
| 17. | Passort Date of Expiration | D | 8 | - |
| 18. | Type of Visa | C | 3 | - |
| 19. | Visa Number | N | 8 | - |
| 20. | Visa Place of Issue | C | 25 | - |
| 21. | Visa Date of Issue | D | 8 | - |
| 22. | Visa Duration | N | 8 | - |

4.2 THE IMPLEMENTATION OF THE NEW SYSTEM

System implementation concerns itself with the coordination and control of all activities necessary to put the new system into operation. These activities include the following:-

- a) Staff training
- b) File Conversion
- c) Change-Over Procedures

4.2.1 Staff Training

This entails training the old staff that will run the new system instead of employing new ones. The advantage here is that the staff trainees are already used to the old system. The training of staff will best be achieved if the vendor that supplies, installs and maintains the equipment is given the assignment to do.

4.2.2 Initial Training

This is an alternative approach where the supplier vendor is not given the training job. It involves the Service sending her men for training prior to the installation of the equipment. This helps to effect a smooth Change-Over.

4.2.3 Follow-up Training and Support

This comes in place when the vendor has supplied and installed the equipment. This is a means of acquiring further knowledge for the particular system. It also provides support and assistance to the users of the system in case of any problem with the system.

4.2.4 File Conversion

It involves the conversion of old file data into the form required by the new system. As regards this project, the VCP data have to be converted from the manual form to the computer type.

In the manual system the VCP data are kept in files and register while with the new system, such records have to be kept into the computer files. The accuracy of such data entered into the computer can be checked by:

- a) Making comparison between the print out of the new files with the old ones.
- b) Viewing through the VDU and making comparison with old files. This is the best to be adopted for this project.

4.2.5 Change-Over

This concerns a complete change of the old system with the new one. It is only undertaken when:-

- i. the new system has been proved to be very satisfactory to the system analyst and other implementation activities.
- ii. the results of the system test, staff training and reference manuals have satisfied the user managers.
- iii. the target change-over data is due. There are various ways by which change-over can be achieved and these are:-

- * Parallel running
- * Pilot running
- * Staged change-over
- * Direct change-over

Parallel running- this means processing the present data side-by-side with the old and new systems so as to check their results. It takes a long time for the old system to be phased out.

Pilot running- this is similar to parallel running method of change-over. Data from the previous period of a system is run on a new system and the results later compared with the old one.

Staged Change-over- this method involves a situation whereby the new system is introduced piece by piece to the organisation before final acceptance of the system and complete adoption of the whole system.

Direct Change-Over- this concerns processing current data by both the old and new in a single move. This Method is very cheap if adopted.

For the purpose of this project, the direct Change-Over method will be *the best* approach. This means replacing the old system of clearing VCP with the new computerized system.

The Nigeria Immigration Service being a security conscious one, needs to hold back some staff and equipment so as to tackle any unanticipated problem incase of an event of failure that may need a temporary reverting to old system.

4.2.6 Installation

This involves the preparation of the location where the equipment will be installed - i.e. the computer room. The electricity current should be checked against fluctuation, where such is rampant, a separate building can be acquired to install a stand-by electricity generating plant. The computer rooms should be carpeted to avoid dust which may affect the computer terminals. The good sites for the installation of the equipment for the purpose of this project are the two halls - namely arrival and departure halls, since the suggested computer system for this project is the micro-computer, which needs very little site preparation.

4.3 A REVIEW OF THE NEW SYSTEM

Once a system is put into use there is the need to examine it to see whether it satisfies the main objectives for which it has been designed on. To do this the following will serve as guide for the examination:-

- a) **Event logging-** this entails users recording unusual event that may affect part or the whole system.
- b) **Attitude Survey-** Sampling data of ideas and opinions about the system from its users.
- c) **Feedback-** from the public who have been directly affected by the system.

- d) the system can then be reviewed for any of the following reasons.
 - i) unforeseen problems arising from the operation.
 - ii) if the main objectives are not met.
 - iii) where the system does not cope with the changing requirement of the service.

CHAPTER FIVE

ANALYSIS OF RESULTS

5.1 PROGRAM TESTING

The programs that have been developed for this project have been test-run and the results compared with the old system and found to be very satisfactory. The output of the new system has shown to be very effective faster and free of duplications, and errors.

The system allows easy accessibility to the visa-carrying-passengers (VCP) files in the databank of the computer systems, quick retrieval and amendments to passengers records.

5.2 SUMMARY AND CONCLUSION

In an attempt to change the present system of clearing VCP to a computerized system which will best meet up the objectives of this project, a careful indepth study of the existing systems features and limitations were carried out and the need for the change identified. These findings were made available in the previous chapters.

A feasibility study of this project was conducted to find out how workable is the computerised clearing of VCP is going to be. All tools needed for carrying out such test were applied and the result was found to be feasible.

In chapter three the analysis of the existing system which is manual was done in order to find out what the system does, its scope and limitations and also what is expected

of the new system. This analysis identified problem areas of the existing system and the need for improvement of the system.

The new system-design has been discussed in the fourth chapter. The program for running the new system was developed and the system specification and the modalities for the implementation of the new system and its review also were highlighted.

The implementation stage includes training existing staff who are to run the new system.

The new system can be seen to be very important in the storage of information on all VCP arriving or departing Nigeria which can be utilized by various organisation for management decision making.

5.3 RECOMMENDATION

The computerization of VCP arriving or departing any Control Post is hereby strongly recommended to the Nigeria Immigration Service.

The numerous advantages of this new system cannot be over-emphasized. It will improve efficiency and enhance effectiveness in addition to financial gains which will be accrued for the Service. This is identified in the cost-benefit analysis.

For every Control Post it is believed that passengers do come and go and the storage of their information is vital to the service. Such information when kept may be released to the required organisations which make the best use of such for management decision making.

It is to be borne in mind that in computer there is timely generation and dissemination of information. The accuracy of such information technology, thus allow the need for the Nigeria Immigration Service to computerize the system of clearing VCP is hereby recommended.

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Notes.

8 How do you store Passengers' data for easy reference? _____

9 Are some passengers' data misplaced or mixed-up with others? Yes ()

No ()

10 Where the answer to 9 above is 'Yes', how do you trace them?

11 What method do you use to find such misplaced Card / Files Containing data of Passengers?

12 How fast do you find such? _____

13 Do you welcome the idea of Computerized VCP clearance at the Control Post? Yes ()
No ()

14 Do you think this Computerization will enhance efficiency and effectiveness? Yes ()
No ()

15 What suggestion can you offer to minimize or curtail the misplacement of files and cards containing VCP data? _____

ARRIVAL FORM – NEW DESIGN

FORM No. -----

1. Surname: _____

2. Other Names: _____

3. Sex: Male Female

4. Date of birth:

| |
|-----|
| Day |
| |

| |
|-------|
| Month |
| |

| |
|------|
| Year |
| |

5. Place of birth: _____

6. Country of birth: _____

7. Nationality: _____

8. Occupation: _____

9. Address of Employers: _____

10 (a). Passport No. _____

(b). Place of Issue: _____

(c). Date of Issue: _____

11 (a). Visa type: _____

(b). Place of Issue: _____

(c). Date of issue: _____

(d). Duration: _____

(e). Period of stay granted: _____

12. Address in Nigeria: _____

13. Signature:

APPENDIX 2 - SCREEN DESIGN AND PROGRAM OUTPUT

COMPUTERISED ARRIVAL/DEPARTURE
MOVEMENT SYSTEM

MAIN MENU

- A ARRIVAL DETAILS
- B DEPARTURE DETAILS
- C VISA TYPE UPDATE
- D REPORT GENERATION
- E SYSTEMS EXIT

PICK YOUR CHOICE:

COMPUTERISED ARRIVAL/DEPARTURE MOVEMENT SYSTEM

ARRIVAL FORM

PASSPORT NO (Press "ENTER" to Exit): 0013482801 FORM NO: 3401

SURNAME: UMAR OTHER NAMES: TANKO BALA

| | | | |
|-----|----------------|---------------|------------------|
| SEX | MARITAL STATUS | DATE OF BIRTH | COUNTRY OF BIRTH |
| M | MARRIED | 12/03/1956 | GHANA |

NATIONALITY: GHANIAN OCCUPATION/PROF: CIVIL SERVANT

| | |
|------------------|----------------------------------------|
| NAME OF EMPLOYER | ADDRESS OF EMPLOYER |
| SHELL BP | SHELL CORPORATE OFFICE, KUMASI - GHANA |

ADDRESS IN NIGERIA: SHELL CORPORATE OFFICE, LAGOS

PRESS ANY KEY TO GO TO THE NEXT SCREEN

COMPUTERISED ARRIVAL/DEPARTURE MOVEMENT SYSTEM

ARRIVAL FORM

PASSPORT NO (Press "ENTER" to Exit): 0013482801 FORM NO: 3401

URNAME: UMAR OTHER NAMES: TANKO BALA

PASSPORT DETAILS - PLACE OF ISSUE: GHANA

DATE OF ISSUE: 03/11/1998 DATE OF EXPIRATION: 03/11/2003

VISA DETAILS - VISA TYPE CODE: 03 VISA NUMBER: 0234556

| PLACE OF ISSUE | DATE OF ISSUE | DURATION (in Days) |
|----------------|---------------|--------------------|
| GHANA | 25/06/2000 | 60 |

DATE OF ARRIVAL: 30/06/2000 PORT OF ENTRY: AMINU KANO AIRPORT

TO SAVE DATA (Y/N):

COMPUTERISED ARRIVAL/DEPARTURE MOVEMENT SYSTEM

DEPARTURE FORM

PASSPORT NO (Press "ENTER" to Exit): 0013482801

FORM NO: 3401

SURNAME: UMAR

OTHER NAMES: TANKO BALA

SEX: M MARITAL STATUS: MARRIED

DATE OF BIRTH: 12/03/1956

PASSPORT DETAILS - DATE OF ISSUE: 03/11/1998

EXPIRING DATE: 03/11/2003

VISA DETAILS - VISA TYPE CODE: 03

VISA NUMBER: 0234556

DATE OF ISSUE
25/06/2000

DURATION
60

DATE OF ARRIVAL
30/06/2000

PORT OF ENTRY
AMINU KANO AIRPORT

DATE OF DEPARTURE: 22/08/2000

TO SAVE DATA (Y/N):

APPENDIX 3 - PROGRAM LISTING

MOVEMENT.PRG

```
set scor off
set stat off
set talk off
set bell off
set date brit
set safe off
set cent on
do whil .t.
  clea
  ch= ' '
  @ 2,15 to 24,64 doub
  @ 2,24 say " COMPUTERISED ARRIVAL/DEPARTURE "
  @ 3,32 say "MOVEMENT SYSTEM"
  @ 1,23 to 4,56 doub
  @ 7,36 say "MAIN MENU"
  @ 6,34 to 8,46
  @ 20,16 to 20,63
  @ 10,22 say "A ..... ARRIVAL DETAILS"
  @ 12,22 say "B ..... DEPARTURE DETAILS"
  @ 14,22 say "C ..... VISA TYPE UPDATE"
  @ 16,22 say "D ..... REPORT GENERATION"
  @ 18,22 say "E ..... SYSTEMS EXIT"
do whil .t.
  @ 22,29 say "PICK YOUR CHOICE:" get ch pict '!'
  read
  if ch $ 'ABCDE'
```

```
    exit
  endi
  ch= ' '
endd
do case
  case ch='A'
    do arrival
  case ch='B'
    do depart
  case ch='C'
    do file
  case ch='D'
    do report
  othe
  exit
endc
endd
clea
retu
```

ARRIVAL.PRG

```
use arrival
do while .t.
  clea
  @ 1,1 to 24,78 doub
  mpportno=spac(10)
  @ 0,15 to 2,64 doub
  @ 1,16 say " COMPUTERISED ARRIVAL/DEPARTURE MOVEMENT SYSTEM
"
```

@ 4,32 to 6,47

@ 5,33 say ' ARRIVAL FORM '

@ 22,2 to 22,77

@ 8,3 say 'PASSPORT NO (Press "ENTER" to Exit):' get mpportno pict '@!'

read

if mpportno = spac(10)

 exit

endi

go top

loca for pportno = mpportno

if foun()

 @ 23,13 say 'PASSPORT NO DOES NOT EXIST, PRESS ANY KEY TO
CONTINUE'

 set cons off

 wait

 set cons on

 loop

 endi

mformno = spac(10)

msurname = spac(20)

moname = spac(30)

msex = ' '

mmstatus = spac(10)

mdbirth = ctod(' / / ')

mcbirth = spac(25)

mnation = spac(18)

mopation = spac(23)

mnemployer = spac(25)

maemployer = spac(45)

maddress = spac(50)


```

mreasons = spac(20)
mpissue = spac(25)
mdissue = ctod(' / / ')
mdexpire = ctod(' / / ')
mvtype = spac(2)
mvno = spac(8)
mpissue2 = spac(25)
mdissue2 = ctod(' / / ')
mduration = 0
mdarrival = ctod(' / / ')
mpentry = spac(20)
@ 8,58 say 'FORM NO:' get mformno
@ 10,3 say 'SURNAME:' get msurname pict '@!'
@ 10,34 say 'OTHER NAMES:' get moname pict '@!'
@ 12,3 say 'SEX'
@ 12,13 say 'MARITAL STATUS'
@ 12,33 say 'DATE OF BIRTH'
@ 12,56 say 'COUNTRY OF BIRTH'
@ 13,4 get msex pict '!'
@ 13,15 get mmstatus pict '@!'
@ 13,35 get mdbirth
@ 13,52 get mcbirth pict '@!'
@ 15,3 say 'NATIONALITY:' get mnation pict '@!'
@ 15,37 say 'OCCUPATION/PROF:' get mopation pict '@!'
@ 17,6 say 'NAME OF EMPLOYER'
@ 17,42 say 'ADDRESS OF EMPLOYER'
@ 18,3 get mnemployer pict '@!'
@ 18,32 get maemployer pict '@!'
@ 20,5 say 'ADDRESS IN NIGERIA:' get maddress pict '@!'
read

```

```

@ 23,21 say 'PRESS ANY KEY TO GO TO THE NEXT SCREEN'
set cons off
wait
set cons on
@ 12,2 clea to 21,77
@ 23,20 say spac(40)
@ 12,3 say 'PASSPORT DETAILS - PLACE OF ISSUE:' get mpissue pict '@!'
@ 14,18 say 'DATE OF ISSUE:' get mdissue
@ 14,47 say 'DATE OF EXPIRATION:' get mdexpire
@ 16,3 say 'VISA DETAILS - VISA TYPE CODE:' get mvtype pict '@!'
@ 16,40 say 'VISA NUMBER:' get mvno
@ 18,18 say 'PLACE OF ISSUE'
@ 18,42 say 'DATE OF ISSUE'
@ 18,58 say 'DURATION (in Days)'
@ 19,14 get mpissue2 pict '@!'
@ 19,44 get mdissue2
@ 19,61 get mduration pict '99999999'
@ 21,3 say 'DATE OF ARRIVAL:' get mdarrival
@ 21,32 say 'PORT OF ENTRY:' get mpentry pict '@!'
read
@ 23,29 say 'TO SAVE DATA (Y/N):'
do whil .t.
    response = ' '
    @ 23,50 get response pict '!'
    read
    if response = 'Y' .or. response = 'N'
        exit
    endi
endd
if response = 'Y'

```

appe blan
repl pportno with mpportno
repl formno with mformno
repl surname with msurname
repl oname with moname
repl sex with msex
repl mstatus with mmstatus
repl dbirth with mdbirth
repl cbirth with mcbirth
repl nation with mnation
repl opation with mopation
repl nemployer with mnemployer
repl aemployer with maemployer
repl address with maddress
repl reasons with mreasons
repl pissue with mpissue
repl dissue with mdissue
repl dexpire with mdexpire
repl vtype with mvtype
repl vno with mvno
repl pissue2 with mp.ssue2
repl dissue2 with mdissue2
repl duration with mduration
repl darrival with mdarrival
repl pentry with mpentry

endi

endd

use

clea

retu

DEPART.PRG

sele 1

use arrival

sele 2

use depart

do while .t.

clea

@ 1,1 to 24,78 doub

mpportno=spac(10)

@ 0,15 to 2,64 doub

@ 1,16 say " COMPUTERISED ARRIVAL/DEPARTURE MOVEMENT SYSTEM
"

@ 4,31 to 6,48

@ 5,32 say ' DEPARTURE FORM '

@ 20,2 to 20,77

@ 22,2 to 22,77

@ 8,3 say 'PASSPORT NO (Press "ENTER" to Exit):' get mpportno pict '@!'

read

if mpportno=spac(10)

exit

endi

sele 1

go top

loca for pportno=mpportno

if .not. foun()

@ 23,14 say 'PASSPORT DOES NOT EXIST, PRESS ANY KEY TO
CONTINUE'

set cons off

wait

```
set cons on
loop
endi
mformno = formno
msurname = surname
moname = oname
msex = sex
mmstatus = mstatus
mdbirth = dbirth
mcbirth = cbirth
mnation = nation
mopation = opation
mnemployer = nemployer
maemployer = aemployer
maddress = address
mreasons = reasons
mpissue = pissue
mdissue = disssue
mdexpire = dexpire
mvtype = vtype
mvno = vno
mpissue2 = pissue2
mdissue2 = disssue2
mduration = duration
mdarrival = darrival
mpentry = pentry
mddepart = ctod(' / / ')
@ 8,58 say 'FORM NO:' get mformno
@ 10,3 say 'SURNAME:' get msurname pict '@!'
@ 10,34 say 'OTHER NAMES:' get moname pict '@!'
```

```

@ 12,3 say 'SEX:' get msex
@ 12,13 say 'MARITAL STATUS:' get mmstatus
@ 12,50 say 'DATE OF BIRTH:' get mdbirth
@ 14,3 say 'PASSPORT DETAILS - DATE OF ISSUE:' get mdissue
@ 14,52 say 'EXPIRING DATE:' get mdexpire
@ 16,3 say 'VISA DETAILS - VISA TYPE CODE:' get mvtype pict '@!'
@ 16,45 say 'VISA NUMBER:' get mvno
@ 18,11 say 'DATE OF ISSUE'
@ 18,27 say 'DURATION'
@ 18,38 say 'DATE OF ARRIVAL'
@ 18,60 say 'PORT OF ENTRY'
@ 19,12 get dissue2
@ 19,27 get mduration pict '99999999'
@ 19,40 get mdarrival
@ 19,56 get mpenry pict '@!'
clea gets
sele b
@ 21,25 say 'DATE OF DEPARTURE:' get mddepart
read
@ 23,29 say 'TO SAVE DATA (Y/N):'
do whil .t.
    response= ' '
    @ 23,50 get response pict '!'
    read
    if response='Y' .or. response='N'
        exit
    endi
endd
if response='Y'
    appe blan

```

repl pportno with mpportno
repl formno with mformno
repl surname with msurname
repl oname with moname
repl sex with msex
repl mstatus with mmstatus
repl dbirth with mdbirth
repl cbirth with mcbirth
repl nation with mnation
repl opation with mopation
repl nemployer with mnemployer
repl aemployer with maemployer
repl address with maddress
repl reasons with mreasons
repl pissue with mpissue
repl dissue with mdissue
repl dexpire with mdexpire
repl vtype with mvtype
repl vno with mvno
repl pissue2 with mpissue2
repl dissue2 with mdissue2
repl duration with mduration
repl darrival with mdarrival
repl pentry with mpentry
repl ddepart with mddepart

endi
endd
use
clea
retu