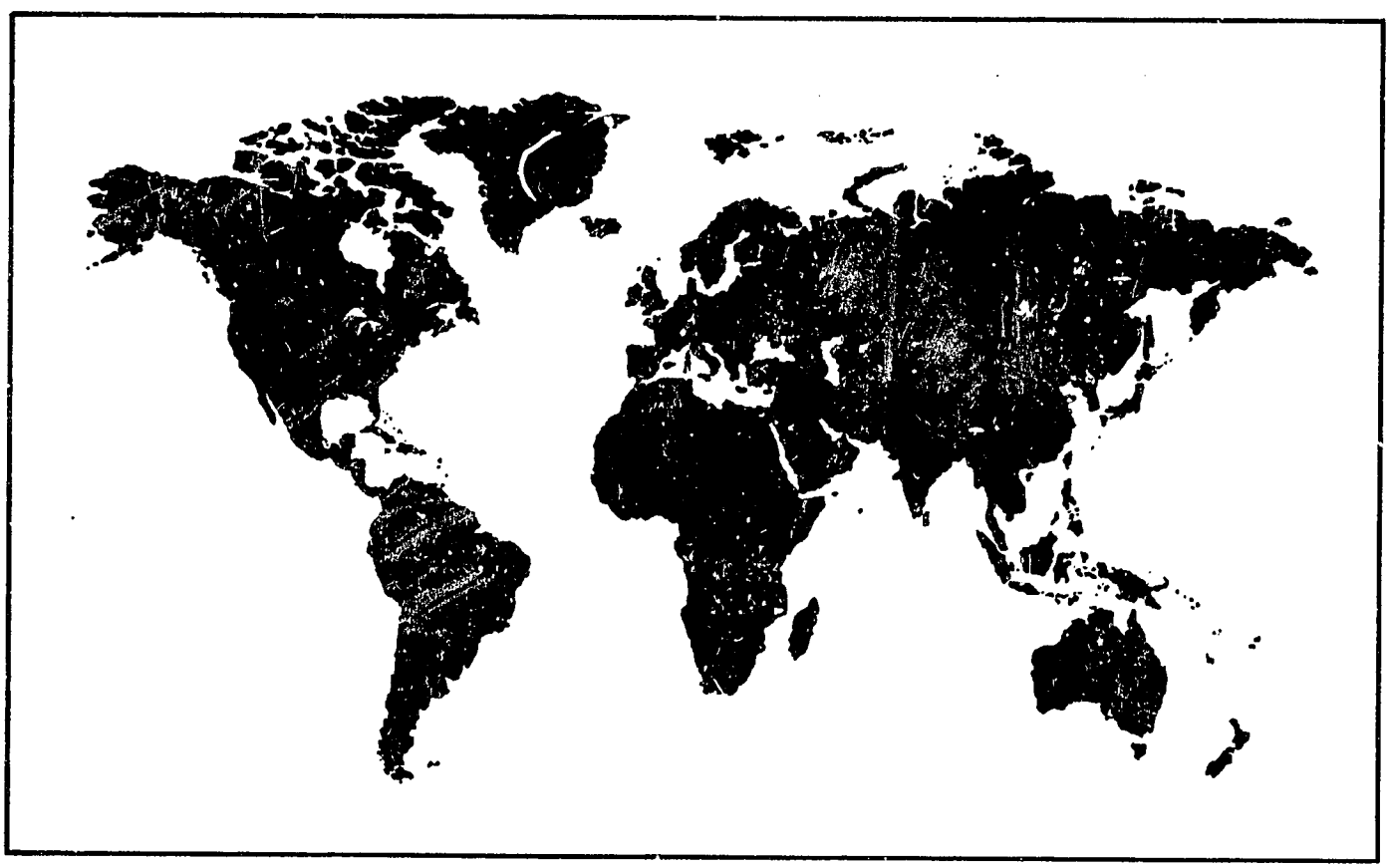
Urban Financial Management

Phase II: Prototype Property Tax Records System for Tunisia

Final Report



Research Triangle Institute

URBAN FINANCIAL MANAGEMENT SERIES REPORTS

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- Urban Financial Management Phase II: Pilot Projects Summary Report
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- West Dagomba District Council (Ghana) Revenue Improvement Project Report
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- Honduras: Municipal Development Program Intermediate Evaluation
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Urban Financial Management

Phase II Report

PROTOTYPE PROPERTY TAX RECORDS SYSTEM FOR TUNISIA

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Preface

This volume is one of three companion volumes to the Urban Financial Management Program Phase II Summary Report which represents the results of the Phase II work, conducted for the A.I.D. Office of Housing and Urban Programs under contract No. AID/SOD/PDC-C-0392. The other two companion volumes describe subproject activities carried out in the Philippines and Costa Rica and are titled:

- Urban Financial Management Subproject: Municipal Information System for Costa Rica
- Urban Financial Management Subproject: Financial Management Workbook for the Philippines

The work described in this report was carried out in close collaboration with the Direction des Collectivités Locales of the Tunisian Ministry of Interior under the supervision of M. Mohamed Saad. In addition, staff of the Centre National d'Informatique (CNI) assisted in the development of the computerized records system, with M. Monces Maourane of CNI working closely with RTI staff in the system design and programming. Local government officials in Kairouan and Sousse were of great assistance in specifying the actual operating environment in which the records system would be used.

The field work in Tunisia was greatly facilitated by the staff members of the A.I.D. Regional Housing and Urban Development office in Tunis. It is hoped that this work contributes to the Agency's mission in assisting urban development in Tunisia and elsewhere in the developing world.

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1.0 Overview

A prototype records system for the Tunisian local property tax was developed for use on microcomputers. The system was designed on a modular basis to meet the needs of all secondary cities in Tunisia. By selecting different, and expandable, hardware configurations, the system can accommodate tax record files of 500 to 20,000 properties.

The computerized prototype is designed to model the existing tax system as it is established by law but to improve upon current applications and records management. The system is compatible with current tax operations in that all steps in the tax assessment and collection system are replicated and all documentation required by existing regulations is provided. However, because of the speed with which the computerized system functions and the amount of information which may be accessed, the tax notification/collection procedures are greatly speeded up and collection problems easily identified early. In addition, the system permits future standardization of tax assessments (a goal of the Tunisian government) and analysis of information on housing stock, costs, tenure and access to municipal services.

The prototype tax records system is programmed using the database management system software "dBase II" which can be used with little or no modification on most commercially available microcomputers. Although an IBM Personal Computer was used in developing the prototype, the system can be used on any hardware which can operate the dBase II

software and which is capable of meeting the equipment specifications described in Section 4 of this report.

The system is designed to be used by persons with no formal training in computer programming. However, it does require some basic familiarity with microcomputer use. RTI staff experience shows that such familiarity can be acquired either through a brief introductory training seminar (approximately a day) or through self-instruction using the guide manuals supplied with any purchased microcomputer system.

2.0 Background

As part of the current Five Year Plan, the Government of Tunisia is implementing a decentralization plan which will increase the responsibilities and the available resources of municipal governments. In support of the decentralization policies, the Direction des Collectivités Locales (DCL) in the Ministry of Interior is conducting programs to introduce improved management techniques in municipal operations. A variety of areas, including personal management, property tax administration and real estate management, are the object of these efforts.

This project was designed to support the activities of the Ministry of Interior by developing a prototype information system. Although an automated information system would improve the management of many municipal resources, this initial activity focuses on improving the local revenue-raising capacity through improvements in residential property tax (taxe locative) administration.

The taxe locative has the potential to be a much more important revenue source than is currently the case in Tunisia. At present, the taxe locative receipts account for 10.9 percent of local government operating budgets. Nationwide, the effective rate of the tax is approximately 4.5 Dinars per residence or 0.75 D per person. This rate of recovery is well below the total assessment, which is well below the estimated actual value of the tax base. Table 1 shows estimates of

Table 1. Comparison of Estimates of Total Tax Base Value, Assessed Value, and Tax Collected in Tunisia, 1980

Potential Tax on Total Value 1/	Estimated Tax on Assessed Value 2/	Tax Locative Amount Collected 3/
30,105,600 D	14,991,630 D	4,997,210 D

1. Potential tax value estimate is calculated by estimating average yearly income of 960 D x 20% (avg. hsq. cost) x tax rate (14%) x number of residences (1,120,000). Average tax liability estimated of 26.88 D per residence is very close to that of the city of Sousse (21 D) and within range of estimates given by GOT personnel as an "average taxe locative liability of 25-30 D per residence.

2. Based on Ministry of Interior personnel estimates (rough) of typical collection efficiency of 33% across all cities. Substantiated by information from Kairouan of collection rate of 30% in 1982.

3. Situation Financiere des Collectivités Locales au 31/12/80, p. 6

NOTE: Taxe Locative rate is 20% of annual rental value of residential property with an exoneration of 10% for the first 15 years of a structures's life. Estimates of housing stock construction rates indicate approximately 60% of housing stock is less than 15 years old (and is taxed at 10% rate) with 40% carrying a 20% tax rate. This produces a combined (average) tax rate of 14% across all residential property.

total tax base, total assessment and amount actually collected. Although the figures for tax base and total assessment in the Table are rough approximations (based on conservative estimates) they appear to be reasonable in light of discussions with local and national officials. They also indicate severe underperformance of the taxe locative, showing both underassessment of the tax base and poor collection efficiency.

This underperformance can be attributed to the structure of the tax system and to the management methods employed in tax administration. Currently, the municipal staff is responsible for maintaining property listings and for performing assessments of each property. There are no standardized criteria for assessing taxable property value. The listings, or tax rolls, result from a general assessment of all properties which is conducted every three to five years and from an annual canvas of new buildings. The tax roll is reconstituted each year following the annual survey. From the roll a tax list containing each property owners' address and tax liability is prepared. In all but the largest Tunisian cities, all of these operations are performed manually by a small staff.

After the municipal tax office staff has prepared the annual tax list, it is passed to the receveur municipal for collections. The receveur is a Ministry of Finance employee who is also responsible for collecting all national government taxes and maintaining the accounts of the local offices of national government agencies. Because the collection of municipal taxes is typically less important to the

receveur than his other responsibilities, the town government often makes staff available to assist in local tax collections.

Although relative performance in tax collections among Tunisian cities varies greatly due to differences in relationships between assessment and collections offices, staff allocated to tax operations and the intensity of enforcement proceedings, tax system procedures are standardized. National enabling legislation defines the reporting and notification requirements for all municipal tax operations. In addition, the tax collectors, as employees of the Ministry of Finance, follow standardized accounting and enforcement procedures.
That the taxe locative performance can be substantially improved is borne out by the recent experience of Sousse. A program to improve collections through automating the tax records and notifications has resulted in greatly increased receipts from the taxe locative to approximately 70 percent of annual tax due. Table 2 shows a comparison of the performance of Sousse on the taxe locative collection with other secondary cities of Tunisia.

Table 2. Comparison of Sousse to all Secondary Cites on Taxe Locative Performance

	Taxe Locative Collected Per Person
Sousse	2.42 D
All Secondary Cities	1.26 D
All Areas (urban and rural)	0.75 D

The Table shows that Sousse is collecting almost twice the taxe locative per capita as that of other secondary cities, indicating that much better performance is, indeed, possible. The financial impact of raising the taxe locative collection rates of all secondary cities to that of Sousse would be substantial. It would increase total local operating budgets by 9.3 percent. It would also increase the proportion of the budget contributed by taxe locative from 10.1 percent to 17.8 percent on average. For the cities that are not performing as well as the average, the budgetary impact of improvement in taxe locative collection would be even greater.

The Government of Tunisia (GOT) recognizes that the poor performance of the taxe locative represents a barrier to improved local resource mobilization and, therefore, a barrier to decentralizing authority for public services. Their inability to collect rather modest taxes does not bode well for the cost recovery schemes envisioned by proposed World Bank and U.S.AID upgrading programs, which will require either direct cost recovery from beneficiaries or mobilization of general tax revenues at the local level.

The GOT has embarked on a program to strengthen the taxe locative system. The Government has already taken two steps to increase the level of assessment and to raise the effective tax rate by removing the 15 year exoneration for new construction. The assessment problem is being addressed by introducing a new set of standardized assessment criteria which would replace the current system of largely individualized assessments of rental value. At the same time, the DCL

requested assistance from the U.S.AID sponsored Urban Financial Management Project in the design of improved tax records systems. The current system is time consuming, labor intensive, slow in dispatching tax notices and difficult to monitor.

As a result of the Sousse success in automating the tax records (which primarily speeded up the dispatch of tax notices printed by computer), the GOT wishes to introduce automation to other secondary cities as well. Automated systems which are slightly more sophisticated than the modest system of Sousse would also permit cities to monitor and analyze assessments and collections. It would appear to be particularly appropriate at a time when new assessment practices are being introduced, particularly practices that lend themselves to computerization. Additionally, the potential yield of the tax is being increased substantially as a result of the removal of the exoneration as well as improved assessment. The assessment criteria and the removal of the exoneration will also require local tax offices to manage a much larger quantity of tax data than is currently necessary.

Following discussions between the RTI project team and representatives of the Ministry of Interior and Ministry of Finance, the development of a prototype tax information system was identifed as the highest impact short-term intervention in the municipal property tax system. As the Ministry of Interior and the National Computer Center were developing a long term plan for the introduction of computerization in local affairs, the prototype served as the first concrete step. Its introduction and diffusion would have a measurable impact on municipal

operations and would sensitize local officials to the potential benefits of computerization. Furthermore, it was decided that a microcomputer-based system would best fulfill the project goals. The relatively low cost of microcomputer systems would allow most Tunisian cities to invest in the equipment and recover the investment in a relatively short time. The system could be dedicated to one municipal operation (although capable of expansion in small cities) while the city planned for a larger integrated system which would require more costly hardware.

Based on the common problems of municipal property tax administration which had been identified by municipal and national government officials, the following objectives were considered in the development of the protoype system.

1. The system should be based on current practices as much as possible, recognizing that the introduction of a computerized system would be a major step in itself for most municipalities.
2. The system design and hardware requirements should target the majority of Tunisian cities. The very largest cities would require more complex systems while the smaller and poorer towns would not be able to afford the system but would be able to rely on neighboring municipalities for data processing.
3. The system design should be flexible in the requirements of the hardware configuration so as to take into account the

diverse needs of cities ranging in population from 5,000 to 50,000.

4. While basing the system on current practices, allow for the introduction of enough data, particularly those concerning property characteristics, so that a basis for assessments could be provided. At the same, standardize data requirements so that assessments across cities could be normalized.
5. Provide software to automate the time-consuming processing steps, particulary for notification, which would free staff to devote time to other phases of tax operations.
6. Use software which requires little computer experience and could therefore be easily learned by existing town staffs.

3.0 Methodology

The prototype system was developed in a four step process which occurred in the United States and Tunisia from February through May, 1983. The steps included:

A. Specifying Inputs/Outputs of Tax Records System

The assessment, census and payment forms constitute the main input into the tax records system. Outputs from the system include tax notices, records of payment, identification of nonpayment, total collection (cash flow), reports that the municipal or national government may require, monitoring of performance of assessors and collectors and other types of analyses which the local government may request. Identifying these inputs/outputs required interviews with system users prior to beginning the design of the system. During this phase, an entire construct of the tax system was developed. The RTI municipal finance consultant carried out this activity during a site visit to Tunis and secondary cities.

B. Identifying Constraints

At the same time that inputs/outputs of the tax system were specified, the constraints on system design and operation were also specified. These include: (1) level of training of system users; (2) language requirements for forms, operating manuals, software, and tax notices; and (3) maintenance considerations. This activity was carried out simultaneously with step A.

C. System Design

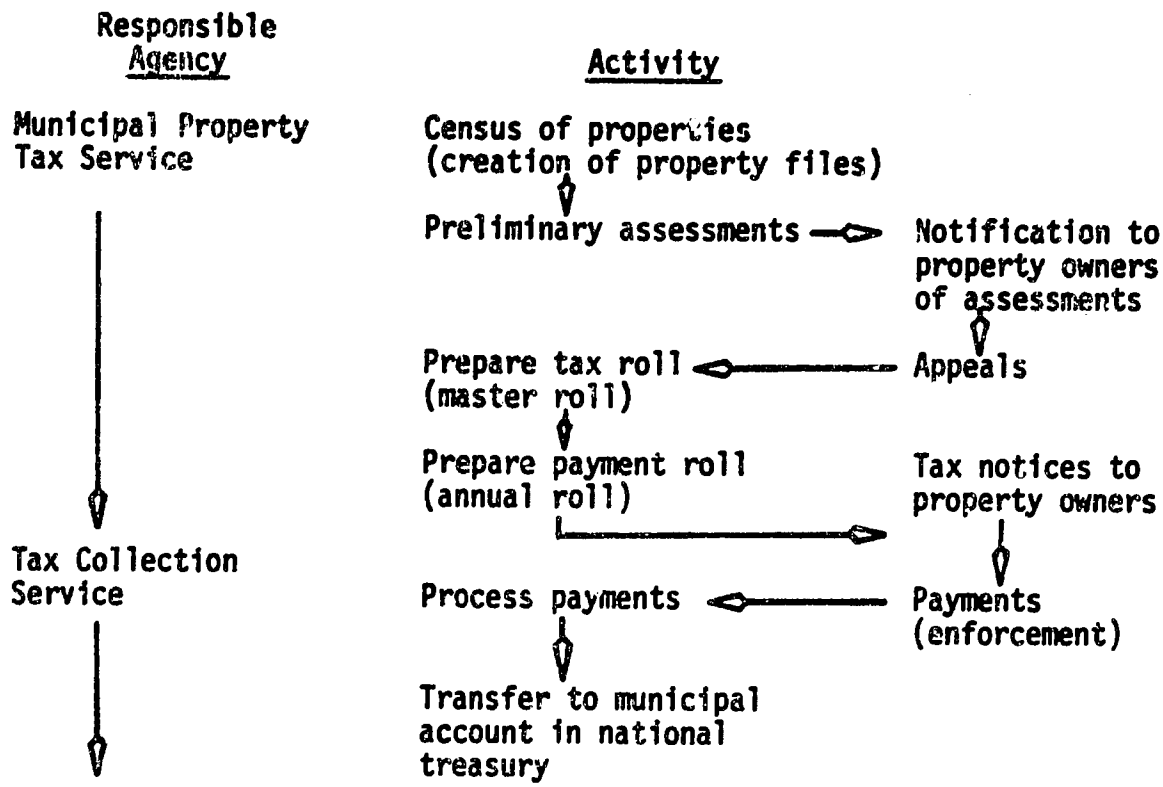
The system design involves overall system configuration and design of the individual components. The system configuration specifies the components of the system and the inputs/outputs of each component. Individual components (forms, record format, software, hardware) were then designed in detail. This activity involved close collaboration between users of the system and technical staff support in computerized records systems. The director of technical projects from the Centre National d'Informatique (CNI), came to RTI to participate in the system design. The participation of the CNI representatives in the design task also served as training in microcomputer applications for tax systems.

D. Developing Training Program for System Users

The new tax records system will require training of local staff and, most likely redefinition of some jobs. A general training program was developed for system users covering all of the system components. The program takes into account the needs of the various participants in tax operations (municipal officials, ministry representatives, and CNI specialists).

4.0 Tax Records System Description

As described earlier, the property tax system is comprised of a succession of activities which are the responsibilities of the municipal property tax service and the tax collection service, a Finance Ministry Agency. The relationship of the general activities are indicated in the following diagram.

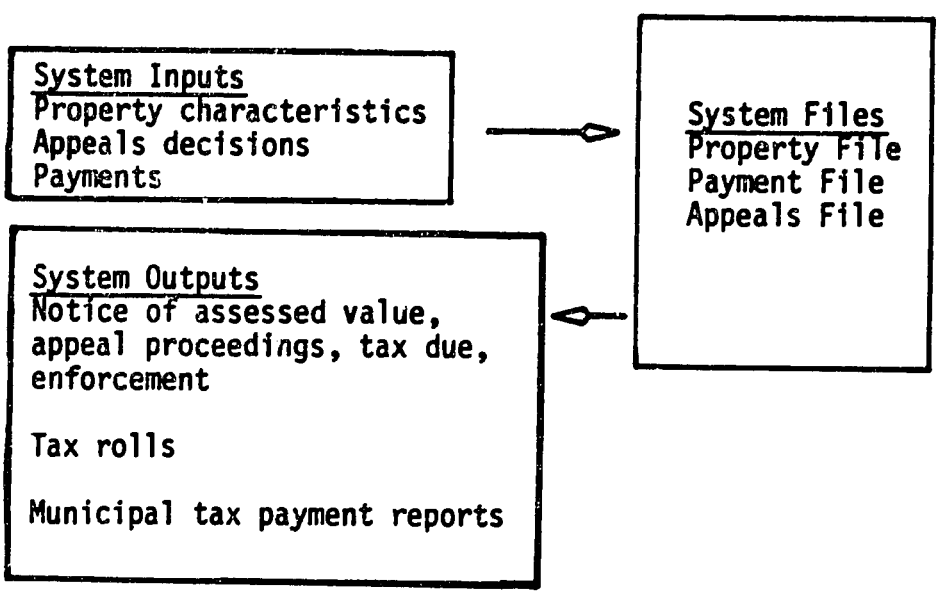


For the system to work efficiently, adequate information must be available at key decision points (for example, assessments, appeals and enforcement) which requires that sufficient information be entered into the system, be processed quickly, and that feed back loops exit. The weaknesses of the current system are to a large extent due to the lack

of these factors in municipal operations. Insufficient information concerning property characteristics as a basis for assessments is obtained for individual files, manual processing is cumbersome and time consuming and there is little feedback from the payment records to the property files.

The computerized system is designed to model the tax system as it is established by law, but to overcome its weaknesses as it is applied in most secondary cities. It is compatible with current tax operations in that all documents required by tax and collections services are provided and the routing of information through the system is consistent with legal and operational requirements. However, because of the speed with which the computerized system functions and the amount of information which may be stored, officials concerned with tax operations are permitted to have more information available for decisions and the elements of the system are more easily linked.

The computerized system structure can be generally described in the following manner:



The system is composed of three files, linked to one another by two identification numbers assigned to each property. The heart of the system is the property file, which is supported and updated by the payment file and the appeals file. The files are composed as follows:

1. Property File, which is divided in two parts

a. Characteristics: This section of the file contains data on some twenty physical characteristics of the property and its surroundings which are used to calculate the rental value of the property. It serves essentially as a storage place for the data forming the basis for the rental value.

b. Census: This section of the property file contains the name and address of the owner and his representative, if any; the address of the property, the estimates of the rental value, the amount of tax due on the property, any past due amount, and the total of payments made for the current year. This part of the file contains all the data necessary for the transactions, notification and production of reports required by the system. It is the primary working file.

2. Payment File - This is a transaction file containing the date of each payment, the receipt number, and the amount of the payment for each individual property. This file will update the total amount paid for the current year in the Property File.

3. Appeals File - This file will exist only for those properties for which the rental value has been contested. The file will contain the date of the appeal and the rental value arrived at by the Review

Committee. This file will update the rental value recorded in the Property File.

Whereas current practice uses only one identification number for each property, the computerized system is based on two identification numbers. The first number is the customary roll number assigned to each property during the preparation of the master roll for each census period. This is generally based on the sequential positions of buildings as they are assessed. The computerized system also incorporates another identifier, an account number, which is based on the property owner's national identity card (or similar number). The inclusion of this second number improves the local authorities' ability to monitor individuals' tax liabilities and assures accounting validity for transactions such as payments.

In addition to the required reports of normal tax operations, the data base management system will readily permit the development of special reports which readily analyze the contents of the tax files. These reports will add to the information available to decision makers and make the tax system more efficient. For example, the assessors office will be able to obtain information concerning average assessments by housing type or sector as a means of validating specific assessments or reviewing appeals. The tax collector will also be permitted to review payments by amount of tax liability, sector, or period in order to focus enforcement efforts at the largest potential targets. Finally, because of the amount of information concerning housing characteristics and infrastructure, the town management and elected boards will be able

to quantify housing quality and supporting services as a basis for planning municipal development efforts.

To support the structure and operating potential which have been described, the system relies on specific software and flexible hardware configurations. The prototype tax system is programmed using the data base management system software dBASEII which can be operated with little or no modification on most currently available microcomputers. The operating systems required for dBASEII are either CP/M 86 or PC D.O.S. (MS DOS).

The minimal hardware configuration for the microcomputer must be the following:

- a processor;
- a central memory of 128K;
- two disk drives for floppy disks (containing 256K of data each);
- a printer of 120 char/sec;
- a screen of 80 x 24 characters.

This configuration will permit the management of 500 properties. In cases where the number of properties exceeds this level, more elaborate configurations are recommended. These can be obtained by adding:

- a hard disk drive of 5 megabytes - for up to 5000 properties;
- a hard disk drive of 10 megabytes - for up to 10,000 properties;

a hard disk drive of 20 megabytes - for up to 20,000 properties.

Although a variety of commercially available microcomputers could satisfy the requirements of this system, it should be noted that it was developed on an IBM Personal Computer.

5.0 USER'S MANUAL

TUNISIA MUNICIPAL PROPERTY TAX MANAGEMENT INFORMATION SYSTEM

INTRODUCTION

OVERVIEW

This User's Manual is prepared to aid individuals in using the component system functions integral to the Municipality Property Tax Management Information System. There are four primary system components that are designed to handle all necessary data processing requirements. These are:

- Data Entry
- Editing
- Searching
- Report Generation

With these four program functions, the user has complete access to all functions necessary to fully utilize the Property Tax System.

The purpose of this User's Manual is to document the use of these system components as they are integrated into the system. As stated in the System Documentation, the Property Tax System utilizes a primary RECENSE data file supported by two transaction data files to process payments (file name-PAIEMENT) and appeals (file name-CONTEST). The data entry, editing and searching functions are applied to each of these data files in a similar fashion. As such, the user simply need know the data format and content of each of the data files in order to apply these functions. This is best accomplished by keeping a copy of the System Documentation handy for ready reference.

SYSTEM OVERVIEW

The System utilizes a menu-driven approach to operation whereby the user is always given, on screen, a set of options from which to choose the next function. This manual describes, in detail, each set of options given to the user within each of the four function areas of data entry, editing, searching, and reporting.

To begin a session using the Property Tax System, the user must place the proper disks in the microcomputer and enter the command:

TAXSYS

The system will then respond with a menu of the four primary system functions as follows:

TUNISIA MUNICIPAL PROPERTY TAX SYSTEM

PLEASE CHOOSE:

1) Data Entry
2) Edit
3) Search
4) Report Generation

or

0) to exit

Selection of the Report Generation function (4) will produce a menu of the different reports available under the system. Processing of each report is further described in the Report Documention.

Selections 1, 2, or 3 will produce a menu of the three data files contained in the system. Selection of a data file will then result in performance of the function selected as applied to the data file selected. Detailed descriptions of these three functions follow.

TUNISIA MUNICIPAL PROPERTY TAX MANAGEMENT INFORMATION SYSTEM USER'S MANUAL

FUNCTION: DATA ENTRY

OVERVIEW

The Data Entry function of the Property Tax System is designed to provide a simple and efficient means for entering information into the system. All data entry is performed via keyboard to a formatted screen layout. The variables that comprise each data record in each data file are clearly presented on the screen adjacent to the designated field of entry. The user has complete control over these fields through use of such functions as backspace, insert, delete, advance to next field, and return to previous field. Full screen editing features are fully integrated to greatly enhance the use of these capabilities.

Like the Edit and Search functions, the Data Entry function requires specification of a data file to which data will be entered. While all data entry capabilities are identical for each of the data files, their appearance will vary slightly depending upon the number and format of the variables and the number of data entry screens required to enter a complete record to the data file. In the case where multiple screens are required, additional capabilities of switching from one screen to the next and back again are provided.

Due to the size of the RECENSE data file (51 variables), each record of information to be entered to the system requires two (2) screens. These are shown in Appendix 1. The CONTEST and PAIEMENT data files only require a single screen for data entry of a record.

DESCRIPTION OF PROCESSING

While each Data Entry screen differs depending upon the data file chosen, each screen shares certain common characteristics designed to guide the user during data entry. Figure 1 illustrates a typical data entry screen (for PAIEMENT file). Row numbers are included on the left margin of the Figure to assist in documenting its characteristics.

FIGURE 1 - PAIEMENT DATA ENTRY SCREEN

```
 0 ENTRY                        FICHIER: PAIEMENT 1/1          REC#  105/ 105
 1
 2 NUM:PROP: :      :
 3 NUM:IDEN: :        :
 4
 5 DAT:QUIT: :  /  /  :            NUM:QUIT: :           :
 6                                 MON:QUIT: :      0.000:
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20 DAT:MAJ : :83/06/30:
21 ================================================================================
22                                                        To exit-enter CTRL-R
```

Screen Header:

Lines 0 and 20-22 of each data entry screen will always follow the format shown above. The upper left corner of each screen (line 0 - left side) will state the nature of the system function. For data entry, this will always be ENTRY. The top center of the screen (line 0 - center) will identify the the data file in use, the screen number and the number of screens required for the data file in use. The upper right corner of the screen (line 0 - right side) indicates the record number of the record currently being added. This is simply a count of the records contained in the data file and does not indicate the relative position within the data file. Positioning of each record within the data file is automatically performed based on the value of the file identifier. The identifiers of each file are further described in the Systems Documentation.

Screen Footer:

The footer for each data entry screen will follow the format shown in lines 20, 21, and 22. Each data file utilizes a "date of last update" variable (i.e. DAT:MAJ) in each data record that is automatically updated by the system date whenever a record is modified. This variable cannot be directly accessed or updated but its value is shown on each data entry screen.

Initial display of each data entry screen places the user in

an full screen mode whereby all the data entry capabilities are at the user's disposal. The user continues to key data until the screen is completed (i.e.. completion of the last variable value - MON:QUIT on the screen shown in the example above). A user may also exit the full screen mode by entering the CTRL-R key combination (enter R while depressing the Control key). This method of exiting input mode is always shown in the lower right of the screen (line 22 - right side).

Full Screen Mode:

Full screen mode provides the user with the ability to enter data into each of the designated variable fields, selectively edit that data, advance to the next field of entry, or return to a previous field of entry. All these capabilities are implemented utilizing full screen editing features. Each feature is implemented as follows:

CTRL-X or cursor down	-	advances cursor to the next entry field.
CTRL-E or cursor up	-	returns cursor to the previous entry field.
CTRL-D or cursor right	-	moves cursor ahead one character. Advances to next entry field if at end of entry field.
CTRL-S or cursor left	-	moves cursor back one character. Returns to previous field if at beginning of entry field.
CTRL-V or INS key	-	toggles between overwrite and insert modes for entry of each field.
CTRL-G	-	deletes the character under the cursor.
DEL key	-	deletes the character to the left of the cursor.
CTRL-R	-	exits to processing prompt.

Screen Processing:

Either method of exiting the full screen mode will result in one of the following prompts appearing on the lower left of the screen (line 22 - left side):

- for single screen entry:

(S)ave, (Q)uit, (E)dit =)

- for two screen entry:

screen 1 - (N)ext screen, (Q)uit, (E)dit =)
screen 2 - (S)ave, (Q)uit, (E)dit, (R)eturn to last screen =)

The system will then wait for a response (of S, Q, or E on single screens/ N, Q, or E on the first screen of two screen entry/ S, Q, E, or R on the second screen of two screen entry). Following is a description of each of these commands.

(S)ave

The (S)ave command (entry of S after prompt) saves all entry to the screen and advances to the next record for entry. If an attempt to save is issued without a valid record identifier (e.g. NUM:PROP), the user will be forced to entry a valid identifier before the save is performed. Complete validation of all fields will also be performed prior to saving.

For two screen data entry (i.e. file RECENSE), the (S)ave command cannot be issued until the second screen. When issued from the second screen, entries from both screens are saved.

(Q)uit

The (Q)uit command (entry of Q after prompt) tells the system to exit data entry. If a valid entry of the file identifier has been made (e.g. NUM:PROP) then the system prompts with the following:

Save current record? V/F :

Entry of V will save all entry to the screen before quiting. Entry of F will quit without saving the contents of the screen.

For two screen data entry (i.e. file RECENSE), the (Q)uit command can be issued from either screen. The user is only given the choice "Save current record? V/F:" on the second screen. If issued from the first screen, data entry is immediately terminated without saving the current screen values.

(E)dit

The (E)dit command (entry of E after prompt) provides the user with the ability to re-enter the full screen mode for the current screen. This provides a useful editing feature in that all previously entered values remain on screen to be replaced or edited at the discretion of the user.

(N)ext screen

The (N)ext screen command (entry of N after prompt) is only applicable to the first screen of two screen data entry (i.e. for file RECENSE). It advances data entry to the

second screen.

(R)eturn to last screen

The (R)eturn to last screen command (entry of R after prompt) is only applicable to the second screen of two screen data entry (i.e. for file RECENSE). It returns the user to input mode on the first screen of the current record. All values originally entered to the first screen are available for editing or replacement. All values entered on the second screen prior to returning to the first screen are maintained "in memory" for subsequent re-editing or saving when the user returns to the second screen.

TUNISIA MUNICIPAL PROPERTY TAX MANAGEMENT INFORMATION SYSTEM USER'S MANUAL

FUNCTION: EDIT

OVERVIEW

The Edit function of the Property Tax System is designed to provide a simple and efficient means for editing information in the system. All editing is performed via keyboard to a formatted screen layout. The variables that comprise each data record in each data file are clearly presented on the screen adjacent to the designated edit field The user has complete control over these fields through use of such functions as backspace, insert, delete, advance to next field, and return to previous field. Full screen editing features are fully integrated to greatly enhance the use of these capabilities.

Like the Data Entry and Search functions, the Edit function requires specification of a data file in which editing functions will be performed. While all editing capabilities are identical for each of the data files, their appearance will vary slightly depending upon the number and format of the variables and the number of screens required to edit a complete record of the data file. In the case where multiple screens are required, additional capabilities of switching from one screen to the next and back again are provided.

Due to the size of the RECENSE data file (51 variables), each record of information to be edited by the system requires two (2) screens. These are shown in Appendix 1. The CONTEST and PAIEMENT data files only require a single screen.

While requiring an initial specification of a data file to edit, the Edit function also provides the ability to choose alternate data files to edit that are indexed on variables contained in the current data file. This function is discussed in more detail below.

DESCRIPTION OF PROCESSING

While each Edit screen differs depending upon the data file chosen, each screen shares certain common characteristics designed to guide the user during an Edit session. Figure 2 illustrates a typical Edit screen (for PAIEMENT file). Row numbers are included on the left margin of the Figure to assist in documenting its characteristics.

FIGURE 2 - PAIEMENT EDIT SCREEN

```
 0 EDIT                        FICHIER: PAIEMENT 1/1          REC# *  54/ 589
 1
 2 NUM:PROP: :      :
 3 NUM:IDEN: :        :
 4
 5 DAT:QUIT: :  /  /  :            NUM:QUIT: :          :
 6                                 MON:QUIT: :     0.000:
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20 DAT:MAJ : :83/06/30:
21 ================================================================================
22                                                    To exit-enter CTRL-R
```

Screen Header:

Lines 0 and 20-22 of each Edit screen will always follow the format shown above. The upper left corner of each screen (line 0 - left side) will state the nature of the system function. For editing, this will always be EDIT. The top center of the screen (line 0 - center) will identify the the data file in use, the current screen number, and the number of screens required for the data file in use. The upper right corner of the screen (line 0 - right side) indicates the current record number and the total number of records in the data file in use. A '*' is used between 'REC#' and the current record number to indicate that the current record is marked for deletion. This is further discussed under the (D)elete command documented below.

Screen Footer:

The footer for each Edit screen will follow the format shown in lines 20, 21, and 22. Each data file utilizes a "date of last update" variable (i.e. DAT:MAJ) in each data record that is automatically updated by the system date whenever a variable value in a record is modified. DAT:MAJ cannot be directly accessed or updated but its value (before edit) is shown on each screen.

As in Data Entry, actual editing of variable values is performed in full screen mode. Once in full screen mode (via the

(E)dit command), the user continues to review, modify, and/or replace variable values in the record until the current screen is completed (i.e., completion of the last variable value - MON:QUIT on the screen shown in the example above). A user may also exit full screen mode by entering the CTRL-R key combination (enter R while depressing the Control key). This method of exiting full screen mode is always shown in the lower right of the screen (line 22 - right side).

Full Screen Mode:

Full screen mode provides the user with the ability to replace data in each of the designated variable fields, selectively edit that data, advance to the next field of entry, or return to a previous field of entry. All these capabilities are implemented utilizing full screen editing features. Each feature is implemented as follows:

CTRL-X or cursor down	-	advances cursor to the next entry field.
CTRL-E or cursor up	-	returns cursor to the previous entry field.
CTRL-D or cursor right	-	moves cursor ahead one character. Advances to next entry field if at end of entry field.
CTRL-S or cursor left	-	moves cursor back one character. Returns to previous field if at beginning of entry field.
CTRL-V or INS key	-	toggles between overwrite and insert modes for entry of each field.
CTRL-G	-	deletes the character under the cursor.
DEL key	-	deletes the character to the left of the cursor.
CTRL-R	-	exits to processing prompt.

Screen Processing:

Upon entry into the Edit function, the system will present the first edit screen for the data file chosen. All edit fields will be blank and the current record number will be 0. On the bottom left side of the screen (lines 21 and 22) the following set of options will appear:

- for data files with single screen editing:

```
(E)dit, (R)estore, (D)elete, (Q)uit, (O)utput, (A)lt
(F)ind, (T)op, (B)ottom, (+), (-), (L)ist                    =>
```

- for data files with two screen editing:

- on screen 1:

```
(E)dit, (R)estore, (D)elete, (Q)uit, (O)utput, (A)lt, (2)
(F)ind, (T)op, (B)ottom, (+), (-), (L)ist                    =>
```

- on screen 2:

```
(E)dit, (R)estore, (D)elete, (Q)uit, (O)utput, (A)lt, (1)
(F)ind, (T)op, (B)ottom, (+), (-), (L)ist                    =>
```

The system will then wait for a response of E,R,D,Q,O,A,1,2 for manipulation of the current record or F,T,B,+,-,L for processing of the data file. Following is a decription of each of these commands.

Each of the following current record commands can be issued only after a record has been identified.

(E)dit

The (E)dit command (entry of E after prompt) provides the user with the ability to enter full screen edit mode on the current screen in the current record. All current record variable values are accessible for editing or replacement (with the exception of DAT:MAJ). All modifications to the current record are saved to the data file after execution of any of the following commands: (A)lt, (F)ind, (T)op, (B)ottom, (+), (-), (L)ist, and where applicable, (Q)uit. Once the updated values are saved, the old values cannot be restored.

(R)estore

The (R)estore command (entry of R after prompt) provides the user with the ability to restore the original values contained in a data record after they have been modified through (E)dit. (R)estore will also restore a record that has been "marked for deletion" by the (D)elete command. Although (R)estore cannot restore old variable values after they have been saved (see (E)dit description), it can restore marked for deletion records any time during the edit session.

(D)elete

The (D)elete command (entry of D after prompt) will mark the current record for deletion. A '*' will appear preceding the current record number in the upper left corner of the screen indicating "marked for deletion". The record will not actually be deleted from the data file until the user exits the current data file (via the (Q)uit or (A)lt commands). At this time the user will be prompted as follows:

```
Delete records marked for deletion ? V/F :
```

Entry of F in response to the prompt will remove all marked for deletion indicators from the data records. Entry of V will delete the records marked for deletion. The (R)estore command will remove the "marked for deletion" indicators.

(Q)uit

The (Q)uit command (entry of Q after prompt) tells the system to terminate the edit session. If any records in the current data file have been marked for deletion, the system will prompt the user prior to actually deleting the records (See (D)elete command description).

(O)utput

The (O)utput command (entry of O after prompt) will output a listing of the current record to the printer.

(A)lt

The (A)lt command (entry of A after prompt) provides the user with the ability to edit an alternate data file with an automatic (F)ind in the alternate data file based on the data file's identifier value contained in the current data file. This is best illustrated through an example:

Current data file: CONTEST
Current data record: NUM:PROP='10001'

Alternate data file: RECENSE

In this scenario, the system will (1) exit the CONTEST data file as if the (Q)uit command was issued, and (2) place the user in the RECENSE data file at the first record with NUM:PROP='10001'.

Critical to the use of this command is that the key field identifier variable of the alternate data file have a corresponding variable (named identically) in the current data file. If the alternate data file has multiple key field variables (e.g.. NUM:PROP+NUM:IDEN+NUM:QUIT in the PAIEMENT data file), only the first key field variable (e.g. NUM:PROP) need be in the current data file.

(1)

The (1) command (entry of 1 after prompt) is only applicable to the second screen of a two screen data file. It returns the user to the first edit screen of the current record.

(2)

The (2) command (entry of 2 after prompt) is only applicable to the first screen of a two screen data file. It advances

the user to the second edit screen of the current record.

Each of the following data file commands can be issued at any time during an edit session. If a current record has been edited when a data file command is issued, that record is saved prior to proceeding with the command.

(F)ind

The (F)ind command (entry of F after prompt) provides the user with the ability to find a record in the data file based upon specification of its key field identifier. Upon entry of the (F) command, the user will be placed in full screen mode for just the key field identifier variables (e.g. NUM:PROP for RECENSE data file). The user can then enter an identifier value, and, upon exit from full screen mode, the system will find the first occurance of that value within the current data file.

(T)op

The (T)op command (entry of T after prompt) will establish the first record in the current data file as the current record.

(B)ottom

The (B)ottom command (entry of B after prompt) will establish the last record in the current data file as the current record.

(+)

The (+) command (entry of + after prompt) will advance the current record to the next record. If issued prior to any records being identified (i.e.. from record 0) it will advance to record 1. If issued from the last record in the data file, the system will remain at the last record.

(-)

The (-) command (entry of - after prompt) will backup the current record to the previous record. If issued prior to any records being identified (i.e.. from record 0) it will advance to record 1.

(L)ist

The (L)ist command (entry of L after prompt) will list on the screen the key field identifiers of the next twenty (20) records starting with the current record. The user will then be prompted:

More? V/F :

If the user responds with V, the next twenty record identifiers are listed. If F, then the current record is reset to the last record in the list and control is returned to the normal edit prompts.

TUNISIA MUNICIPAL PROPERTY TAX MANAGEMENT INFORMATION SYSTEM USER'S MANUAL

FUNCTION: SEARCH

OVERVIEW

The Search function of the Property Tax System is designed to enable the user to quickly identify all records and associated data meeting user selected criteria. Questions such as those shown below can be answered quickly, efficicently and effectively through use of the Search function.

- Which properties have payment in arrears?

- Which properties have successfully appealed their tax amount?

Through specification of a "search expression", the system will search for all records that meet the users criteria.

DESCRIPTION OF PROCESSING

Like the Data Entry and Edit functions, the Search function requires specification of a data file in which searching functions will be performed.

Method of Display

Upon specification of the data file to be searched, the user is prompted for the method of displaying information for those data records found in the search process. The users choices are (1) Formatted screen of all variables, or (2) List of data file key field identifier variables only.

Formatted Screen

Under this option, the complete contents of each data file record (all variable names and values) are displayed on a formatted screen identical to those used in the Data Entry and Edit functions. Upon display of each record, the user will be promoted as follows:

(C)ontinue, (Q)uit, (O)utput, (2) =>

Where (2) will be displayed in screen 1 of a two screen data file and (1) will be displayed in screen 2 of a two screen data file.

(C)ontinue

The (C)ontinue command (entry of C after prompt) will continue the search.

(Q)uit

The (Q)uit command (entry of Q after prompt) will terminate the current search and return the user to re-entry of the search expression.

(O)utput

The (O)utput command (entry of O after prompt) will print a copy of the current record on the printer. If a two screen data file is in use (e.g. RECENSE), both screens will be printed.

(1)

The (1) command (entry of 1 after prompt) will return the user from screen 2 of the current record to screen 1. This command is only applicable to use of a two screen data file.

(2)

The (2) command (entry of 2 after prompt) will advance the user from screen 1 of the current record to screen 2. This command is only applicable to use of a two screen data file.

Due to the size of the RECENSE data file (51 variables), each record of information to be displayed by the system requires two (2) screens. These are shown in Appendix 1. The CONTEST and PAIEMENT data files only require a single screen.

List

Under this option, only the key field identifier variables of each of the data records found in the search are displayed on the screen. Up to twenty records (one screen full) will be identified in this manner. If the search of the specified data file has not yet completed, the user will then be prompted as follows:

(C)ontinue, (Q)uit, (O)utput =>

(C)ontinue

The (C)ontinue command (entry of C after prompt) will continue the search. Up to twenty additional records will be identified before the prompt is repeated.

(Q)uit

The (Q)uit command (entry of Q after prompt) will

terminate the current search and return the user to re-entry of the search expression.

(O)utput

The (O)utput command (entry of O after prompt) will print a copy of the contents of the screen on the printer.

The Search Expression

Upon specification of the method of display, the user will be prompted for a "search expression". A search expression, as defined in the Search function, is a logical mathematical expression, such that when compared to each record in the data file, will yield a result which is either true or false. (e.g. if a user desired to identify all properties build in 1940, the user would search the RECENSE data file to find those records (i.e. properties) where ANN:CONS='1940'. That is, for each record, the evaluation would be made - True, it does, or False, it does not). To meet this end, each search expression can consist of up to six components:

1) variables (e.g.. ANN:CONS)
2) constant alpha-numeric values (e.g. 1940 or 'A')
3) functions (e.g. VAL(), TRIM(), DATE(), !(), etc..)
4) relational operators (e.g. =, (, #)
5) logical operators (e.g.. .AND., .OR.)
6) arithmetic operators (e.g. +, -, *)

Each search expression must be constructed using these components such that, when compared to each data record, the result TRUE or FALSE will result.

Variables

Variables can be used in the expression in comparison to a constant (e.g. ANN:CONS=1940), in comparison to other variables (e.g. MON:OCCU=MON:CNTL), as components of a function (e.g. TRIM(NOM:PROP)), or as components of arithmetic expressions using numeric values and/or other variables (e.g. MON:TAXE+MON:ARR) MON:PAYE). The user is directed to the data file descriptions contained in the Systems Documentation for a listing and description of the variables contained in each data file.

Constant Alpha-numeric Values

Constant alpha-numeric values are generally used in search expressions in comparison to a variable to find those records with a variable value equal to (or less than, or greater than, or not equal to) the constant specified. Please note that constants compared to variables of type "char" (see Systems Documentation) must be enclosed in single quotes. (e.g. COD:RUE='1'). Please note also that variables with a length greater than that given in

the constant specification must employ the TRIM function for proper evaluation. (e.g. TRIM(NOM:PROP)='M.D. CONNELLY').

Functions

The Search function can utilize several of the standardized functions integral to the database management system (DBASE II) being utilized. These include:

INT((numeric expression))

The INT() function evaluates a numeric expression composed of numeric constants and/or variables of type "num" and truncates all decimal place accuracy.

```
INT(123.45)     =>   123
INT(MON:ARR)    =>   5105   where MON:ARR=5105.120
```

$((char expression),(start),(length))

The $() or substring function creates a character string from a specified part of another character string or expression starting with the character at position (start) in the (char expression) for (length) characters. (char expression) can be composed of alpha-numeric constants and/or variables of type "char".

```
$('ABCDEFG',2,4)     =>   BCDE
$(DAT:QUIT,4,2)      =>   07   where DAT:QUIT='83/07/16'
```

VAL((char string))

The VAL() function forms a integer value from a character string. It can also be used to extract just the leading numerics in a character string.

```
VAL('123.45')        =>   123
VAL(DAT:QUIT)        =>   83  where DAT:QUIT='83/07/16'
```

LEN((char string))

The LEN() function yields an integer whose value is the length of (char string).

```
LEN('M.D.CONNELLY')  =>   12
LEN(DAT:QUIT)        =>    8
```

@((char string 1),(char string 2))

The @() or substring match function yields an integer whose value is the character number in (char string 2) whcih begins a substring identical to (char string 1). If (char string 1) does not occur in (char string 2) then this function yields the value zero (0).

```
@('234','01234567')  =>   3
@('10',DAT:QUIT)     =>   4   where DAT:QUIT='83/10/01'
```

!(<char expression>)

The !() or upper case function translates all lower case letters in <char expression> to upper case.

```
!('Tax')          =>   TAX
!(NOM:PROP)       =>   CONNELLY   where NOM:PROP='Connelly'
```

DATE()

The DATE() or current date function generates a character string of the current date maintained by the computer.

```
DATE()     =>   83/07/05
```

TRIM(<char string>)

The TRIM() function truncates all trailing blanks from <char string>. As such, this function is extremely valuable in doing comparisons of variables and constants (see examole).

```
TRIM('12 345   ') => '12 345'
TRIM(NOM:PROP)    => 'Connelly'  where NUM:PROP contained
                                 the value 'Connelly     '
                                 as it was originally keyed
                                 in data entry.
```

Relational Operators

The relational operators are used to express the relationship between variables and constants, or between two variables. Following is a list and brief description of the relational operators that can be used in a search expression.

<	=	less than
>	=	greater than
=	=	equal
<>	=	not equal
<=	=	less than or equal
>=	=	greater than or equal
$	=	substring operator (e.g. if X and Y are character strings, X$Y will be TRUE if and only if X is equal to Y or X is contained in Y).

Logical Operators

There are three logical operators available for use in the search exoression:

.OR. = boolean or
.AND. = boolean and
.NOT. = boolean not

These logical operators are used to combine two or more logical expressions. The following statements define the use of .AND.,

In the following definitions, assume that X and Y each represent logical expressions (e.g. DAT:QUIT ('83/07/16') within a search expression.

1. The expression

X .AND. Y

has the value of TRUE if and only if both X and Y have the value TRUE. Otherwise it has the value FALSE.

2. The expression

X .OR. Y

has the value TRUE if either or both of X and Y have the value TRUE. Thus, the expression is FALSE if and only if both X and Y are FALSE.

3. The expression

.NOT. X

has the value TRUE if X is FALSE and has the value FALSE if X is TRUE.

Arithmetic Operators

The four standard arithmetic operators of addition (+), subtraction (-), multiplication (*) and division (/) are allowed in the search expression between numeric constants, variables or expressions. The addition operator (+) can also be used between character constants, variables or expressions for concatenation (e.g. 'M.D.'+'CONNELLY'='M.D.CONNELLY'). Parentheses are also allowed in search expressions to facilitate grouping or ordering of expressions.

Entry of a Search Expression

The user will be provided two lines for entry of the complete search expression. The search expression can be terminated by entry of a carriage return from the second line or by hitting CTRL-R (enter R while pressing the Control key).

The user can always terminate the processing of a search expression by hitting the ESC key. This will return to the

search expression prompt. If the specified search expression cannot be evaluated (due to miskeying or incorrect formulation), the user will be prompted to 'MAKE CORRECTIONS?'. On simple errors, this method of correction is feasible. However, on complex search expressions, it may be significantly easier to hit the ESC key and re-enter the search expression.

APPENDIX 1a - RECENSE DATA FILE FORMATTED SCREEN LAYOUT

```
 0                          FICHIER: RECENSE 1/2
 1
 2 NUM:PROP: :      :                ANN:REC : :     :
 3 NUM:IDEN: :        :
 4                                   ANN:CONS: :     :
 5 NUM:PREC: :        :              NUM:PERM: :           :
 6
 7 ------------------------------------------------------------------------
 8
 9 NBR:OCCU: :   :              COD:OCCU: : :          VOF:ELEC: : :
10 NBR:ETAG: :   :                                    VOF:EAU : : :
11 NBR:BAIN: :   :              COD:UTIL: : :          VOF:EGIM: : :
12                              COD:IMEB: : :          VOF:CLIM: : :
13 SUP:IMEB: :          0:                            VOF:CHAU: : :
14 SUP:BATI: :          0:      COD:MAT : : :
15 SUP:TERR: :          0:                            VOF:ECLR: : :
16                              COD:RUE : : :          VOF:EGRU: : :
17 MON:COUT: :       0.000:
18
19
20 DAT:MAJ : :83/06/30:
21 ========================================================================
```

```
 0                          FICHIER: RECENSE 2/2
 1
 2 NUM:PROP: :      :                  COD:AVIS: :I:
 3 NUM:IDEN: :        :                AD1:IMEB: :                          :
 4                                     AD2:IMEB: :                          :
 5
 6 NOM:PROP: :                       : NOM:MAND: :                          :
 7 AD1:PROP: :                       : AD1:MAND: :                          :
 8 AD2:PROP: :                       : AD2:MAND: :                          :
 9 ------------------------------------------------------------------------
10 NOM:AGEN: :    :                    ANN:REC : :     :
11 ------------------------------------------------------------------------
12 MON:BAIL: :       0.000:            NUM:TAUX: :   :
13 MON:OCCU: :       0.000:            MON:TAX : :       0.000:
14 MON:REC : :       0.000:            MON:FNAH: :       0.000:
15 MON:CNTL: :       0.000:
16
17 COD:CONT: : :
18 MON:VALO: :       0.000:            MON:ARR : :       0.000:
19                                     MON:PAY : :       0.000:
20 DAT:MAJ : :83/06/30:
21 ========================================================================
```

APPENDIX 1b - CONTEST DATA FILE FORMATTED SCREEN LAYOUT

```
 0                          FICHIER: CONTEST 1/1
 1
 2 NUM:PROP: :      :
 3 NUM:IDEN: :        :
 4
 5 DAT:CONT: :  /  /  :            MON:COMM: :       0.000:
 6                                 MON:JUGE: :       0.000:
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20 DAT:MAJ : :83/06/30:
21 ================================================================================
```

APPENDIX 1c - PAIEMENT DATA FILE FORMATTED SCREEN LAYOUT

```
 0                          FICHIER: PAIEMENT 1/1
 1
 2 NUM:PROP: :      :
 3 NUM:IDEN: :        :
 4
 5 DAT:QUIT: :  /  /  :          NUM:QUIT: :           :
 6                               MON:QUIT: :      0.000:
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20 DAT:MAJ : :83/06/30:
21 ================================================================================
```

6.0 System Documentation

6.1 File Descriptions

The following are the detailed specifications of the content of each of the three data files: the Property file, the Appeals file, and the Payment file. Each data file is comprised of data records and each record is comprised of variable values. Presented below is a description of each of the variables that appear in each of the data file records. A more detailed description of each individual variable can be found in the Catalogue of Variables. These preliminary general comments will help the reader understand the format and terminology of the file specifications.

- Each record in each data file is comprised of a set of data elements called variables. The system is designed such that each variable is referenced by a variable name. The variable names presented in the specifications are arbitrary. In general, a variable name should not exceed eight characters in length and must begin with an alphabetic character (A-Z).
- The variable types "num" (numeric) and "char" (character or alphanumeric) reference the content of each of the variable values; not the internal computer storage technique utilized. A type "char" variable generally will allow any combination of printable keyboard characters. A type "num" indicates that only the following characters be allowed in the field:

  0 1 2 3 4 5 6 7 8 9 + . (or blank)

- The max length specification indicates the maximum number of character positions allowed in the variable data field. It can be noted that some variables have a specification of 3 immediately following the length specification. This indicates the number of decimal places to the right of a decimal place to be allowed in a field. For example, a specification of 5.1 would allow a total number of 5 characters (including the decimal point), including one value following the decimal point, or a maximum value of 999.9 for the variable.
- The value range specified on certain variables is employed as a data entry edit check to insure proper encoding of the data field. It should be noted, however, that certain variables are required data entry fields (e.g. NUM:PROP) while other variables will accept a "blank" (missing) entry.
- All date fields contained in the system should be in the form YY/MM/DD to allow simple sorting and comparison of values.

Property File

The Property data file is designed to store information on the physical characteristics of the property, the calculation of tax rate and the amount of tax due, as well as names and addresses necessary for the production of reports and notices. This will be the main working file, containing nearly all the data necessary for processing of reports. To facilitate the use of this file, and data entry into this file, the Property data file has been divided into two screens:

Characteristics - including data on the physical features of the property; and Census - containing data on the assessed rental value, the amount of tax due, and names and addresses of owners. Please note that while the data is divided and entered on two different screens, all the property information is stored in one record in the computer. The following is a description of the variables displayed on each of these two screens.

Property File - Screen 1

This screen contains data on the physical characteristics of the property which serve as a basis for the calculation of the rental value.

Variable Name	Description	Type	Length	Range Values
NUM:PROP	Property number	num	5	
NUM:IDEN	Identity number	num	7	
NUM:PREC	Former Property number	num	5	
ANN:REC	Census year	char	4	
ANN:CONS	Year of construction	num	4	
NUM:PERM	Permit number	char	10	
NBR:OCCU	Number of occupants	num	2	
NBR:ETAG	Number of floors	num	2	
NBR:BAIN	Number of bathrooms	num	2	
SUP:IMEB	Floorspace of property	char	10	
SUP:BATI	Constructed area of lot	char	10	
SUP:TERR	Total Area of lot	char	10	
MON:COUT	Cost of construction	num	11.2	
COD:OCCU	Occupant code	char	2	1-4
COD:UTIL	Use code	char	2	1-8
COD:IMEB	Building type code	char	2	1-5
COD:MAT	Construction Materials code	char	2	1-9
COD:RUE	Street code	char	2	1-4
VOF:ELEC	T or F - Electricity	char	2	V,F
VOF:EAU	T or F - Running water	char	2	V,F
VOF:EGIM	T or F - Sewer connection	char	2	V,F
VOF:CLIM	T or F - Air conditioning	char	2	V,F
VOF:CHAU	T or F - Heating	char	2	V,F
VOF:ECLR	T or F - Street Lights	char	2	V,F
VOF:EGRU	T or F - Sewer lines	char	2	V,F
*DAT:MAJ	Date of last update	char	8	

Key field identifier variable = NUM:PROP

Property File - Screen 2

This screen contains the name and address of the owner and/or his agent, and the address of the property. It also includes data on the various estimates of rental value, the amounts of tax due, past dues, and payments for the current year.

Variable Name	Description	Type	Length	Range Values
*NUM:PROP	Property number	num	5	
*NUM:IDEN	Identity number	num	7	
*ANN:REC	Census year	char	4	
AD1:IMEB	Address of property	char	25	
AD2:IMEB	Address of property	char	25	
NOM:PROP	Name of owner	char	25	
AD1:PROP	Owner's address	char	25	
AD2:PROP	Owner's address	char	25	
NOM:MAND	Agent's name	char	25	
AD1:MAND	Agent's address	char	25	
AD2:MAND	Agent's address	char	25	
MON:VALO	Rental value	num	6	
NUM:TAUX	Tax rate	num	2	
MON:TAXE	Tax due	num	6	
MON:FNAH	Amount due for FNAH	num	6	
MON:ARR	Past due amount	num	6	
MON:PAYE	Amount paid	num	6	
COD:CONT	Code for appeals	num	1	
COD:AVIS	Mailing code	char	1	I,M,P
NOM:AGEN	Census agent's name	char	25	
MON:BAIL	Amount of lease	num	6	
MON:OCCU	Occupant's declaration	num	6	
MON:REC	Census agent's estimate	num	6	
MON:CNTL	Controler's estimate	num	6	
*DAT:MAJ	Date of the last update	char	8	

Payment File

The payment file will contain the date, receipt number, and amount paid for each payment made on a given property. The amount paid will update the current year payments in the property file.

Variable Name	Description	Type	Length	Range Values
NUM:PROP	Property number	num	5	
NUM:IDEN	Identity number	num	7	
DAT:QUIT	Date of payment	num	6	
NUM:QUIT	Receipt number	char	6	
MON:QUIT	Amount of payment	num	6	
*DAT:MAJ	Date of last update	char	8	

key field identifier variables = NUM:PROP, NUM:QUIT, DAT:QUIT

Appeals File

The appeals file will be created only for those properties where the estimate of the rental value has been appealed. It will contain the rental value arrived at by the Review Committee and, if necessary, the Court. This file will update the rental value contained in the property file.

Variable Name	Description	Type	Length	Range Values
NUM:PROP	Property number	num	5	
NUM:IDEN	Identity number	num	7	
MON:COMM	Committee's decision	num	6	
MON:JUGE	Court's decision	num	6	
DAT:CONT	Date of review	char	6	
*DAT:MAJ	Date of last update	char	8	

key field identifier variables = NUM:PROP, DAT:CONT

These variables will be displayed on the screen, but will not be entered by the operator. The DAT:MAJ will be picked up by the system itself, while NUM:PROP, NUM:IDEN and ANN:REC on the second property screen will be picked up automatically from the first screen.

6.2 Catalogue of Variables

Following is an alphabetical list of all variable names with their description, location, use, and explanation of codes.

AD1:IMEB
AD2:IMEB

Description: Address of property
Type: Character
Length: 25 for each variable
Location: Property File
Use: These variables are used in the production of reports, notices, etc., in order to identify the property being taxed.

AD1:MAND
AD2:MAND

Description: Address of owner's agent
Type: Character
Length: 25 for each variable
Location: Property File
Use: Notices will be sent to this address in cases where owner designates a managing agent for his property.

AD1:PROP
AD2:PROP

Description: Owner's address
Type: Character
Length: 25 for each variable
Location: Property File
Use: This address is used in the production of notices, reports, etc. in order to identify the property owner.

ANN:CONS

Description: Year of construction of property
Type: Character
Length: 4
Location: Property File
Use: The date of construction is used in the calculation of the tax rate.

ANN:REC

Description: Year of last census
Type: Character
Length: 4
Location: Property File

COD:AVIS

Description: Mailing code
Type: Character
Length: 1
Location: Property File
Use: This code indicates to which address all notices will be sent.
Key:
I - all mail will be sent to the property itself
P - all mail will be sent to the owner's address
M - all mail will be sent to the agent's address

COD:CONT

Description: Appeals Code
Type: Character
Length: 1
Location: Property File
Key:
0 - not appealed
1 - appealed

COD:IMEB

Description: Code for type of building
Type: Character
Length: 1
Location: Property File
Use: This code indicates the type of property taxed, and is used in the caluclation of the rental value.
Key:
1 - Villa
2 - Apartment
3 - Traditional (Arab House)
4 - Popular
5 - Other

COD:MAT

Description: Code for building materials
Type: Character
Length: 1
Location: Property File
Use: The type of construction materials is used in the calculation of the rental value.

Key		Exterior Walls	Interior Walls	Floor
1	-	without plaster	plaster	cement
2	-	without plaster	plaster	tile
3	-	without plaster	plaster	cement
4	-	without plaster	plaster	tile
5	-	plaster	plaster	cement
6	-	plaster	plaster	tile
7	-	plaster	plaster	cement
8	-	plaster	plaster	tile
9	Luxury, marble, carpet, etc.			

COD:OCCU

Description: Occupation code
Type: Character
Length: 1
Location: Property File
Use: This code designates by whom the property is occupied, or if it is rented or not
Key:
1 - owner occupied
2 - rentee occupied
3 - donated (free occupancy)
4 - unoccupied

COD:RUE

Description: Street Code
Type: Character
Length: 1
Location: Property File
Use: This variable helps define the infrastructure in the property area
Key:
1 - dirt track
2 - paved street
3 - paved street with dirt sidewalks
4 - paved street with cement sidewalks

COD:UTIL

Description: Property Use Code
Type: Character
Length: 1
Location: Property File
Use: This code indicates how the property is used, and helps define the tax status of the property.
Key:
1 - Single habitation
2 - Multiple habitation
3 - Office
4 - School
5 - Hospital
6 - Mosque, or religious center
7 - Factory, business, market
8 - Other

DAT:CONT

Description: Date of Review
Type: Character (date-44/MM/DD)
Length: 8
Location: Appeals File
Use:

DAT:MAJ

Description: Date of last update
Type: Character (date-44/MM/DD)
Length: 8
Location: All files
Use: This date will indicate for each record in each data file when the last update was carried out.

DAT:QUIT

Description: Date of receipt of payment
Type: Character (date-44/MM/DD)
Length: 8
Location: Payment of File
Use: This indicates the date of the issuance of each receipt for each payment made.

MON:ARR

Description: Amount of Tax past due
Type: Numeric (3 decimal place)
Length:
Location: Property File
Use: This records the amount of tax past due from previous years. It is included on certain notices, and is updated by the payment file.

MON:BAIL

Description: Lease amount
Type: Numeric (_ decimal place)
Length: 6
Location: Property File
Use: In cases where a lease exists, this records the amount of rent specified on the base, and is used as a basis for the rental value of the property.

MON:CNTL

Description: Controler's estimate
Type: Numeric ( )
Length: 6
Location: Property File - Census
Use: This records the Controler's estimate of a property's rental value, in cases where he differs with the census agent's estimate.

MON:COMM

Description: Review Committee's estimate
Type: Numeric
Length: 6
Location: Appeals File
Use: In cases of appeals, this records the Review Committee's decision on a property's rental value. This updates the rental value in the property file.

MON:COUT

Description: Cost of construction
Type: Numeric ( )
Length: 6
Location: Property File

MON:FNAH

Description: Amount of tax for the FNAH
Type: Numeric ( )
Length: 6
Location: Property File
Use: This records the amout due for the FNAH, calculated at 4% of the rental value. It is added to the past due amount and rental tax amount to give the total amount to be paid. The FNAH amount is listed separately on various notices produced.

MON:JUGE

Description: Court's decision on rental value
Type: Numeric ( )
Length: 6
Location: Appeals File
Use: In cases which are appealed to the courts, this records the court's decision as to the property's rental value. This updates the rental value in the property file.

MON:OCCU

Description: Occupant's declaration
Type: Numeric ( )
Length: 6
Location: Property File
Use: This records the occupant's declaration of the amount of rent he pays or that he thinks the property could be rented for.

MON:PAYE

Description: Amount paid for current year
Type: Numeric ( )
Length: 6
Location: Property File
Use: This variable maintains a running total of payments made for the current year. It is updated by the payment file.

MON:QUIT

Description: Amount of receipt
Type: Numeric ( )
Length: 6
Location: Payment File
Use: This records the amount of each individual payment made, and update the payments recorded in the property file.

MON:REC

Description: Census agent's estimate
Type: Numeric ( )
Length: 6
Location: Property File
Use: This is the census agent's estimate of a property's rental value.

MON:TAXE

Description: Amount of rental tax due
Type: Numeric ( )
Length: 6
Location: Property File
Use: Thisis the amount of tax due calculated on the rental value (not including FNAH and past dues). It is used in the production of various notices.

MON:VALO

Description: Rental Value
Type: Numeric ( )
Length: 6
Location: Property File
Use: This is the definitive rental value of the property used to calculate the tax due. It is included on notices to taxpayers.

NBR:BAIN

Description: Number of bathrooms
Type: Character
Length: 2
Location: Property File

NBR:ETAG

Description: Number of floors
Type: Character
Length: 2
Location: Property File

NBR:OCCU

Description: Number of occupants
Type: Character
Length: 2
Location: Property File

NOM:AGEN

Description: Census agent's name
Type: Character
Length: 25
Location: Property File

NOM:MAND

Description: Owner's agent's name
Type: Character
Length: 25
Location: Property File

NOM:PROP
Description: Owner's name
Type: Character
Length: 25
Location: Property File

NUM:IDEN
Description: Identity number
Type: Character
Length: 7
Location: All files
Use: This identity number is owner based, taken from the owner's national ID card, and will be assigned national ID card, and will be assigned to each property belonging to the owner. This number, combined with the property number, will help prevent any mistakes in data entry/or property identification.

NUM:PERM
Description: Permit number
Type: Character
Length: 6
Location: Property File
Use: The presence of a building permit is used in the calculation of the tax rate.

NUM:PREC
Description: Former property number
Type: Character
Length: 5
Location: Property File
Use: This records the property number assigned to a property during the preceding year.

NUM:PROP
Description: Property number
Type: Character
Length: 5
Location: All files
Use: This is a property based number; each property will have its own unique number for purposes of identification. This number will be included on all reports and notices.

NUM:QUIT
Description: Receipt number
Type: Character
Length: 6
Location: Payment File
Use: This records the number of each receipt of payment issued.

SUP:BATI

Description: Constructed area of lot
Type: Character
Length: 10
Location: Property File
Use: This indicates the area of the lot which is taken up by a building.

SUP:IMEB

Description: Floorspace building
Type: Character
Length: 10
Location: Property File

SUP:TERR

Description: Total area of lot
Type: Character
Length: 10
Location: Property File

VOF:CHAU

Description: True or False - Heating system in building
Type: Character (V or F)
Length: 1
Location: Property File

VOF:CLIM

Description: True or False - building airconditioned
Type: Character (V or F)
Length: 1
Location: Property File

VOF:EAU

Description: True or False - Running water in building
Type: Character (V or F)
Length: 1
Location: Property File

VOF:ECLR

Description: True or File - Street lights
Type: Character (V or F)
Length: 1
Location: Property File

VOF:EGIM

Description: True or False - Sewer connection in house
Type: Character (V or F)
Length: 1
Location: Property File

VOF:EGRU line

Description: True or False - Street equipped with sewer

Type: Character (V or F)
Length: 1
Location: Property File

VOF:ELEC

Description: True or False - Electricity in house
Type: Character (V or F)
Length: 1
Location: Property File

7.0 Report Documentation

The report descriptions include the following elements: general description, files required as sources, variables, and required processing.

The following listing of reports include all of the written outputs which are currently required by the Tunisian property tax system. As some cities are already using computerized systems, especially for notices to property owners, the format of existing notices has been used to the extent possible. The report titles and their English translation include:

Avis d'Estimation - Estimated Assessment Notice

Avis d'Estimation: Decision de la Commission de Révision -
Estimated Assessment Notice: Decision of the Review Commission

Rôle Matrice - Master Role

Rôle Annuel - Annual Roll

Avis Sans Frais - No cost notice (first payment notice)

Avis Recommandé - Registered Notice

Liste de Commandement et Saisi - List for Order and Seizure

Bordereau Mensuel - Monthly Statement

Bordereau Trimestriel - Quarterly Statement

Title: Avis d'Estimation

Description: This report will be sent to all property owners to inform them of the rental value attributed to their property. It will include the address of the property, the assigned rental value, the amount of rental tax due and the deadline for appeals. The municipality will issue one Avis for each taxable property at the beginning of each tax year.

Files required: Property File - Census

Variable required:

NUM:PROP
NUM:IDEM
NOM:PROP
AD1:PROP
AD2:PROP
AD1:IMEB
AD2:IMEB
MON:VALO
MON:TAXE

Processing required: Date of issuance of the notice and deadline date for appeals will be provided manually.

Title: Avis d'Estimation - Décision de la Commission de Révision

Description: This notice will inform property owners of the decision of the Review Committee on those cases where the initial rental value was appealed. The Avis will contain the Committee's rental value decision, the amount of rental tax due, and the deadline for any further appeals.

File required: Property File - Census

Variables required:

NUM:PROP
NUM:IDEN
DAT:REC
NOM:PROP
AD1:PROP
AD2:PROP
AD1:IMEB
AD2:IMEB
MON:TAXE
MON:VALO

Processing required: The date of issuance, the date of closure of the census period, and the deadline for further appeals (60 days after closure date) will be filled in manually.

Title: Rôle Matrice

Description: This master role will contain the name and address of the owners, a minimum of information on the property characteristics, its rental value, the tax rate and the total tax due for each property. This role will be produced annually after the resolution of all appeals, and will serve as a base for the production of the annual role.

Files required: Property File - Characteristics

Property File - Census

Variables required:

From Property File - Characteristics

NUM:PROP
NUM:IDEN
ANN:CONS
COD:OCCU
COD:UTIL
COD:IMEB
DAT:REC

From Property File - Census

NOM:PROP
AD1:PROP
AD2:PROP
AD1:IMEB
AD2:IMEB
MON:VALO
NUM:TAUX
MON:TAXE
MON:FNAH

Calculations required: The amount of tax due (MON:TAXE) and the charge for FNAH (MON:FNAH) will be added to give the total amount to be paid.

Title: Rôle Annuel

Description: The annual role will document the amount of tax due on each property and will record the payments made by property owners. This role will be produced annually, following the creation of the master role.

Files required: Property File - Census

Payment File

Variables required:

From Property File - Census

NUM:PROP
NUM:IDEN
NOM:PROP
AD1:PROP
AD2:PROP
AD1:IMEB
AD2:IMEB
MON:TAXE
MON:FNAH
MON:PAYE

From Payment File

NUM:QUIT
MON:QUIT
DAT:QUIT

Calculations required: The MON:TAXE and MON:FNAH will be added together to give the total amount due.

Title: Avis Sans Frais

Description: This report officially notifies the property owner as to the amount of tax due on each property, and the deadline for payment. This notice is issued following the creation of the annual role.

File required: Property File - Census

Variables required:

NUM:PROP	AD1:IMEB
NUM:IDEN	AD2:IMEB
NOM:PROP	MON:ARR
AD1:PROP	MON:TAXE
AD2:PROP	MON:FNAH

Processing required: The date of issuance and the deadline for payment will be provided manually.

Title: Avis Recommandé

Description: This registered notice serves as a first delinquency notice for those

properties on which payment has not been made.

File required: Property File - Census

Variables required:

NUM:PROP	AD1:IMEB
NUM:IDEN	AD2:IMEB
NOM:PROP	MON:ARR
AD1:PROP	MON:TAXE
AD2:PROP	MON:FNAH

Processing required: The date of issuance and deadline for payment will be provided manually.

Title: Liste de Commandement et Saisie

Description: This list will identify those properties on which no payment has been made. The list will be forwarded to the tax collector who will take steps to secure payment.

File required: Property File - Census

Variables required:

NUM:PROP	AD1:IMEB
NUM:IDEN	AD2:IMEB
NOM:PROP	MON:ARR
AD1:PROP	MON:TAXE
AD2:PROP	MON:FNAH

Title: Bordereau Mensuel

Description: This monthly report will furnish information on the total payments for the month, as well as total payments for the year to date.

File required: Payment File

Variable required: MON:QUIT

Calculation required: All payment amounts (MON:QUIT) will be added to give the total amount of payments made for the year. The computer will also sum payments made during the period in question.

Title: Bordereau Trimestriel

Description: This quarterly report will contain the current total of payments for the tax year as well as for the individual quarter. This will be sent to the Ministry of the Interior and the Governor.

File required: Payment File

Variable required: MON:QUIT

Calculation required: All payment amounts (MON:QUIT) will be added to give the total amount of payments made for the year. The computer will also sum payments made during the period in question.

8.0 Training Program Outline

This proposed training program is designed to familiarize all the actors involved in the property tax system with the characteristics and the operation of the automated system. Participants in the training will include personnel from the Ministry of Finance and the Ministry of the Interior, as well as personnel from the municipal tax office and from the National Computer Center (CNI). The level of training offered will correspond to the different levels of interaction with the system required of the various personnel. The training also corresponds to the three levels of documentation which will accompany the system: General, User, and Technical Documentation.

In order to prepare and organize the most efficient and productive training program possible, it is recommended that experts from RTI spend three to five days at the chosen demonstration site. During this time, they will study the operation of the manual tax system in the site, and will familiarize themselves with the work loads and responsibilities of the personnel involved with the system. This will permit them to better adapt the training sessions to the personnel to be trained, to the exact configuration of hardware chosen for the system, and to the specific needs of the demonstration site.

Actor	Training	Time
Ministry of Interior Ministry of Finance	General introduction to the system: its goals, its characteristics, its structure, its operation, its limitations.	1 day
Muncipality- - Muncipal board - Director of the Property Tax Service - Tax Collector	General introduction to the system: its goals, its characteristics, its structure, its operation, its limitations.	1 day
Office personnel: - Property Tax Service - Collector's Office	Introduction to system. Explanation of their various roles in the daily operation of the system. Presentation of scheduled output reports and of special reports they can request from the system.	2-3 days
Census Agents	- General presentation of system	1 day
	- Detailed explanation - line by line - of the new census sheet	2 days
	- Trial census: censusing of 5-10 properties per agent - discussion of problems, methods in using the new sheets; 2nd census of 5-10 properties each - finalization of methods.	10-15 days
Operators	- Detailed study of system and its operation: structure and content of files and records, steps of data entry, updating, processing; study of commands and prompts; use of the printer, etc.	10-15 days

Actor	Training	Time
National Computer Center	- Technical training: ongoing study of dBASE II manuals	10-15 days
	- Seminar on specific programming for property tax system - its technical aspects; how to modify programs, write new programs, solve problems, etc.	3-5 days