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# LOS ANGELES COUNTY REGIONAL JUSTICE INFORMATION SYSTEM (RJIS) SOFTWARE SYSTEM DESIGN

Murray I. Rosenthal  
Senior Project Leader  
System Development Corporation  
Santa Monica, California

Russell D. Cramer  
Administrative Assistant II  
Superior Court  
Los Angeles, California

Victor M. Suzuki  
Sergeant  
Marshal's Department  
Los Angeles, California

In July, 1970, Los Angeles County, assisted by Federal funds obtained through the California Council on Criminal Justice, launched an 18-month, \$434,000 project to design its Regional Justice Information System (RJIS). The design effort was performed by an integrated team of consultants and representatives of nine major county justice agencies (Sheriff's Department, District Attorney's Office, Municipal Court, Public Defender's Office, Marshal's Department, Superior Court, County Clerk's Office, Probation Department, and Data Processing Department) plus the Los Angeles (City) Police Department. The basic design work has been completed, and Los Angeles County is currently preparing to select a contractor to help implement the system. The following paper reviews briefly the case-following concept which is the basis for RJIS and then summarizes the software design recommended for the system.

## SCOPE OF LOS ANGELES COUNTY JUSTICE AGENCIES

Los Angeles County Criminal Justice Agencies are among the largest in the world. With a population of nearly eight million, the County annually processes over 3.5 million traffic and parking citations, prosecutes 350,000 felony and misdemeanor crimes, and processes more than 50,000 juvenile cases. Within the 4,000 square miles of the County, there are 24 Municipal Courts, 2 Justice Courts, and 1 Superior Court with 203 Departments. There are 49 police agencies in operation in the County. Local custodial facilities, having an average daily population of 13,000, comprise the sixth largest such system in the nation.

## CASE-FOLLOWING CONCEPT

RJIS is predicated upon the premise that as an accused offender's case is processed by the county's criminal justice system the case is handled by each of the concerned agencies in a sequence which generally begins with law enforcement agencies, proceeds through court and court-related agencies, and ends with correctional agencies. The RJIS case-following concept further maintains (1) that personnel in each agency dealing with an accused offender ought to have ready access to much of the information previously collected on the case by personnel in agencies that have already processed the case and (2) that agency personnel should be able to add information to the case records both for their own use and for the use of personnel in other agencies with a common interest in the case. Finally, the case-following concept maintains that because records have been centralized, it is possible to develop statistical and management information on both the overall performance of the justice system and on the manner in which any individual case has been handled. Clearly the whole approach presumes extensive applications of computers, telecommunications, and remote-access terminals.

Each of the participating justice agencies was studied to determine the applicability of the case-following concept. Current operations were determined to depend largely upon the separate and redundant collection of information, much of which is maintained manually. Investigation revealed that all the participating agencies could benefit from RJIS. Investigation also revealed that the case-following concept applied to juveniles as well as to adult misdemeanants and felons. It was also determined that the vast majority of information in the system could be shared among agencies without compromising either the individual's right to privacy or the security of agency information. The overall case-following concept is shown in Figure 1. Other systems, especially at the state and federal levels will be interfaced into this overall concept, but, for simplicity, are omitted from the figure.

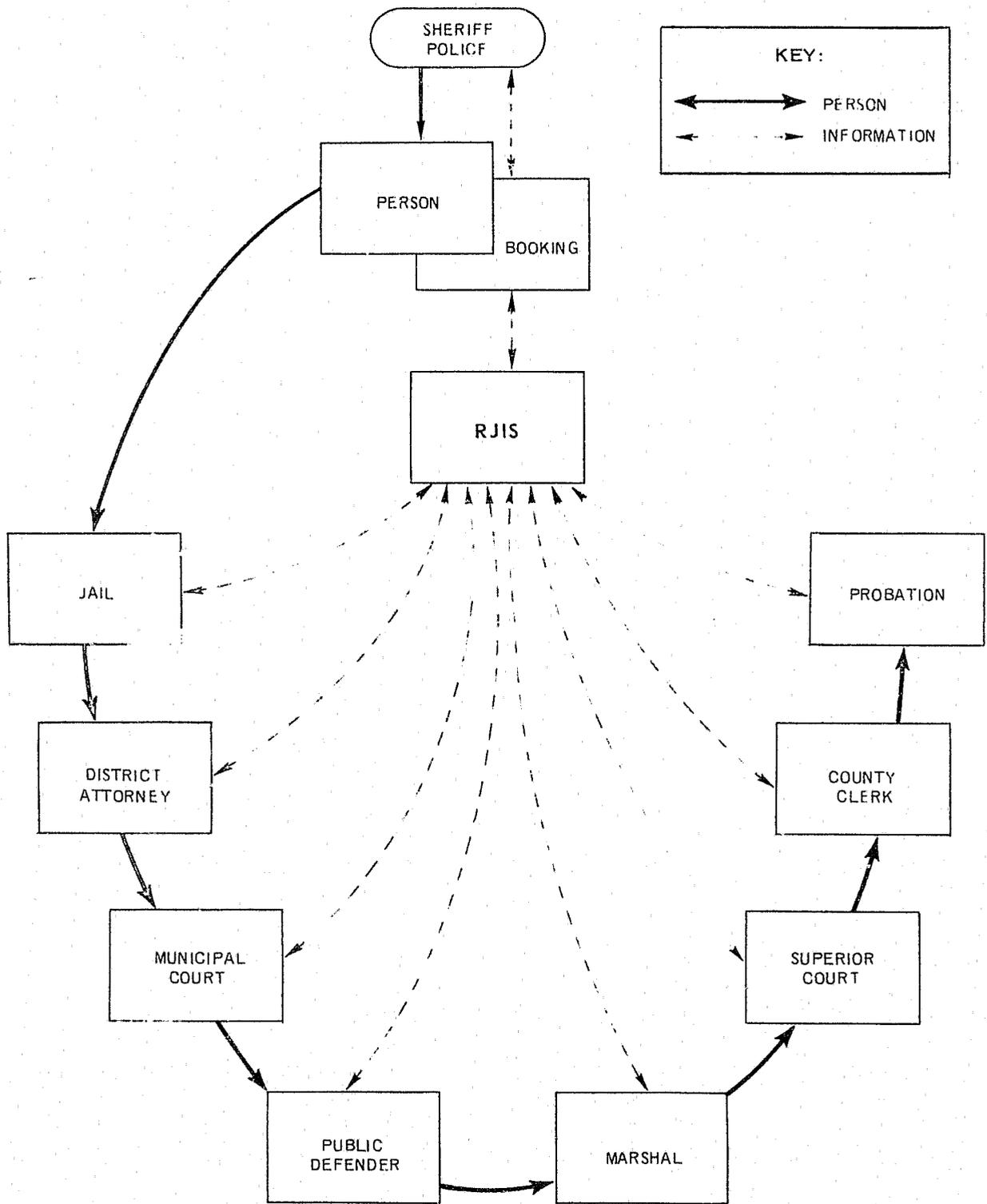


Figure 1. RJIS Case-Following Concept

## OVERALL RJIS SOFTWARE DESIGN

The recommended RJIS design provides a computerized case-following system capable of storing, retrieving, and manipulating the data needed to process adults and juveniles through the Los Angeles County justice system. The Capabilities are shown in generalized form in Figure 2. The system of programs consists of six major modules operating on a common data base:

1. *Switching Module.* This module connects the RJIS user to the system so that he can input or retrieve data. It also connects the user to other computerized local, state, and federal systems.
2. *Service Module.* This module performs all the functions required to support the other RJIS modules including data input, retrieval, and routing; report and display generation; error control monitoring; need-to-know determination for access control, and protection of the system against failures.
3. *Indexing, Numbering and Identification Module.* This module links together all the cases in the system, active or closed, in which the same person is involved. It uses name, RJIS number, case number, incident number, fingerprints (where available), and other identifiers to provide the necessary linkages. (RJIS number, case number, and incident number are discussed below.)
4. *Status and History Module.* This module determines status, past events, and next scheduled event for each case in the system. It serves as an automated docket sheet or register of action for all cases. It also automatically abstracts key events in a case to produce a summary criminal history showing arrest, major milestones, and disposition for each case.
5. *Calendar and Scheduling Module.* This module performs functions necessary to facilitate bringing an accused person, judge, prosecutor and defense attorney, witnesses and evidence together in a courtroom to conduct a trial or other judicial proceeding. It prepares all necessary calendars, subpoenas, witness lists, and other legal documents.
6. *Management Information Module.* This module provides supervisors in county justice agencies with operational information useful in directing day-to-day activities and provides the manager of those agencies with information useful in preparing and evaluating long-range plans.

The RJIS data base stores all of the information input to or generated within RJIS for easy access by system users. Provision is made for handling multiple cases for an individual, each at various stages in its processing. Provision is also made to provide access to prior cases as required.

## NUMBERS USED IN THE SYSTEM

The RJIS number, case number, and incident number, together, are designed to facilitate tracking a case or an individual through the justice process.

An RJIS number is initially assigned to each individual when he first enters into the county's criminal justice system and is re-used to identify him any time he re-enters the system. In addition to the basic identification number, the RJIS number includes three suffixes:

1. *Cycle.* Identifies each prosecution cycle. A prosecution cycle starts with an arrest or with the filing of charges and ends

with a conviction, acquittal, dismissal of a court action, or final disposition after arrest and no court action.

2. *Count.* Identifies each count within a prosecution cycle.
3. *Sequence.* Identifies sequence of each action within a prosecution cycle.

The case number is initially assigned to each case in the system. When a case is closed, its number is used to retrieve case information for future reference. While an individual can have only one RJIS number, he can be associated with several case numbers. The incident number identifies an individual crime report. Since the system deals primarily with incidents that have become cases, incident numbers will be assigned by individual law enforcement agencies, but must allow unique identification of reporting agency and individual crime report.

## SOFTWARE SYSTEMS

In order to implement RJIS it is necessary to develop specialized computer programs. These fall into two categories: those programs that control the overall operation of the system and those that perform the specific user-oriented data processing required to support the administration of criminal justice in Los Angeles County. The system control functions are performed by computer programs included in the RJIS Service and Switching Modules. The user-oriented applications modules include the Indexing, Numbering, and Identification Module; the Case Status and History Module; the Calendar and Scheduling Module; and the Management Information Module.

## SERVICE MODULE

The Service Module performs all functions, except telecommunications' switching, designed to support the operation of the other RJIS modules. It contains the following computer program sets:

1. *Input Editing.* This computer program set performs a grammar edit, by examining the input message for syntax errors. The basic requirement is that all transactions will be grammar edited before going to the application modules in order to minimize the processing required on erroneous input data.
2. *Routing.* This computer program set transmits data from transactions to the various application modules according to prespecified rules. An entire transaction may be forwarded to only one module or to several, or various subsets of the transaction may be forwarded to various modules. Erroneous transactions discovered by the Input Edit Computer Program Set are forwarded to the Error Handling Computer Program Set.
3. *Control.* This computer program set determines the timing and order of processing as data flows through the system. Specific application modules may be required to generate reports or update files on a periodic time basis, i.e., daily, weekly, etc. The operational sequence of all modules will be under the control of this computer program set. It is anticipated that there will be control functions pertaining to the sequence of operation inside a given application module. This

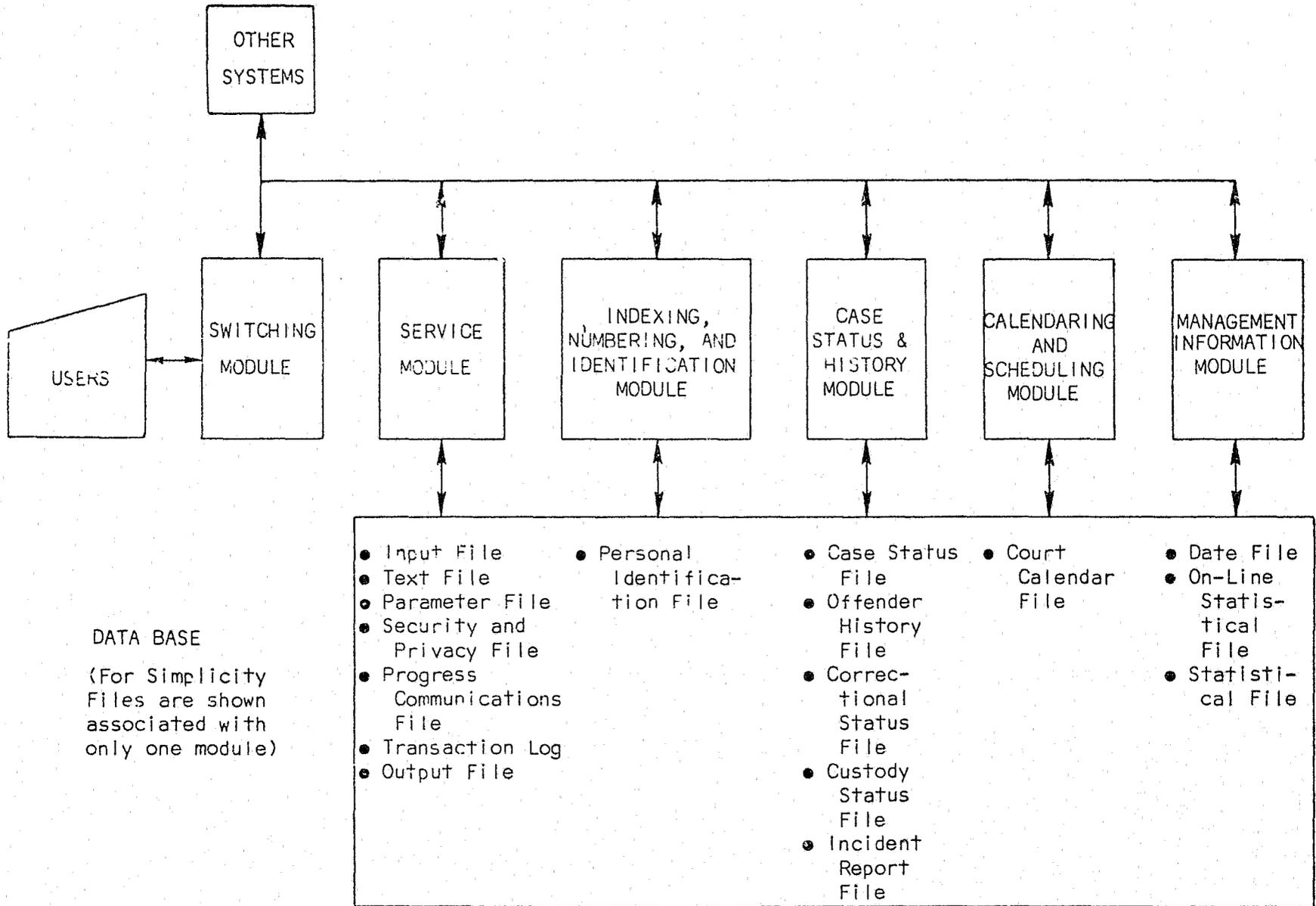
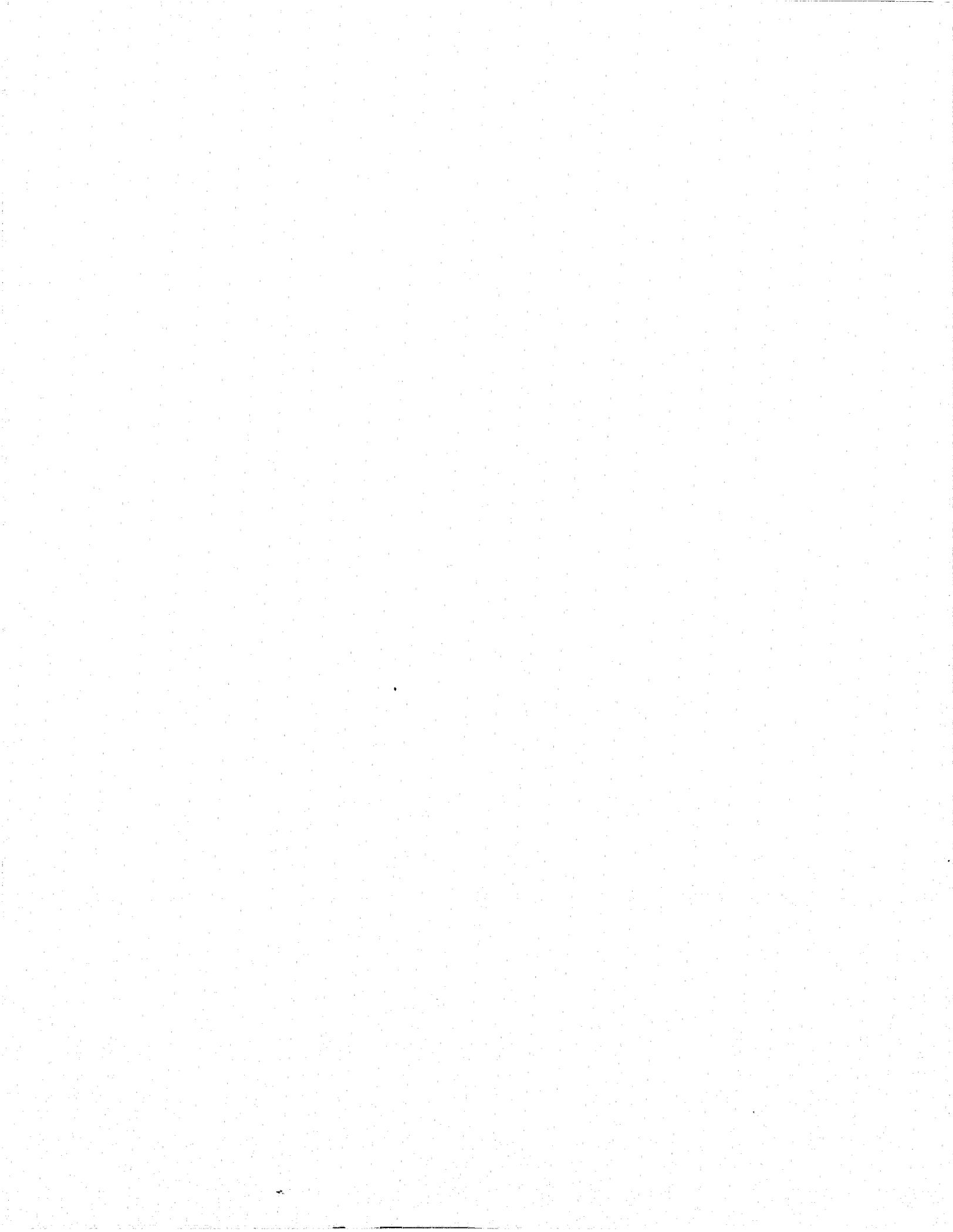


Figure 2. RJIS Structure: Modules and Data Base



function does not pertain to this type of intramodule control, but only pertains to the intermodule control of application modules and to the control of functions within the Service Module.

4. *System Maintenance.* This computer program set determines whether all the proper elements required for input from and output to the terminals are present and available.
5. *Error Handling.* This computer program set maintains a direct link between all the functions within the Service Module and the application modules. When an error is encountered, whether it was initiated from the user terminal or encountered in the application module, the error handling function is given control. The error is analyzed and the proper error message is pulled from an error message file and sent to the user terminals.
6. *Output Generator.* This computer program set is responsible for controlling the flow of data to all output devices including video display units, printers, and magnetic tape units.

The Service Module should not be confused with the basic operating system, which all computer systems require to operate. The Service Module functions within the environment of the basic operating system to control the overall operation of RJIS.

## SWITCHING MODULE

This module concentrates input and queries from user terminals into queues; routes them to RJIS or to interfacing local, state, and federal systems; receives responses from RJIS and interfacing systems, or outputs generated as a result of internal RJIS operations; and routes all outputs to the appropriate user. RJIS will use the switching capabilities of the Los Angeles County Sheriff's Department Communication System, which is now being developed. The Sheriff's Communication System consists of two sets of switching elements that are of interest to RJIS:

1. Remote Computers, which will be located at each existing or planned Sheriff's station.
2. Justice Digital Interface Computers (JDIC), which provide interfaces among various automated systems.

The Remote Computers (see Figure 3) perform two separate, but related, functions. They process requests for service and transmit them on a priority basis to a Radio Telephone Operator at the Sheriff's Radio Center for transmission to a unit in the field; this function is separate from RJIS. Remote Computers also act as concentrators, channeling queries to the JDIC for relay to various interfacing automated systems at local, state, and federal levels.

In the Sheriff's Communication System, all users planned to interconnect with a Remote Computer will be Sheriff's Department personnel located within the Sheriff's station which is serviced by the Remote Computer. In the joint RJIS/Sheriff's Communication System configuration, non-Sheriff users located in the vicinity of a Sheriff's station

will also be interconnected with the Remote Computer serving that station. In addition to the Remote Computers specifically planned for the Sheriff's stations several additional Remote Computers are projected to serve RJIS users who are not located near a Sheriff's station.

The JDICs are designed to do the following: receive a query for an interfacing automated system; convert that query, if necessary, to the format of the system being queried; receive the reply from the queried system; route the reply to the terminal requesting information. Two separate JDICs constitute a single installation (see Figure 4\*). Under normal circumstances the Remote Computers they service are divided between the two machines so that they can share the inquiry processing load. Each JDIC senses the operational status of the other JDIC through a watchdog timer. If a JDIC fails, any queries being processed by that JDIC are lost, and users are signaled that they must reinitiate their queries. In addition to the two JDICs planned for the Sheriff's Communication System, several additional JDICs may be required solely to handle RJIS traffic. Each Remote Computer will be hard-wired to the JDICs via the Los Angeles County microwave network. The JDICs will be interconnected with interfacing systems via dedicated telephone lines or via the California Law Enforcement Telecommunication System (CLETS), as appropriate.

## INDEXING, NUMBERING, AND IDENTIFICATION MODULE

This module performs all functions involved in determining whether a person, case, or incident is new to RJIS or is already in the system. Among these functions are assigning numbers and establishing new files for entries on new persons, cases, and incidents and associating entries for person, cases, and incidents with existing files. The module also plays a key role in providing information (1) on the cross references among various entries such as from person to case to incident or from incident to case to person, and (2) on the physical location of data in the various RJIS computers and storage devices. These cross references and physical-location indicators are used by all other RJIS modules.

The overall structure of the module is shown in Figure 5. It includes seven computer program sets:

\* The local terminals, shown in Figure 4, are included in the Sheriff's JDIC but are not planned for the RJIS JDICs. The matrix control unit, switching matrix, and signalling network interface units are all required to establish and maintain lines between the JDICs and Remote Computers.

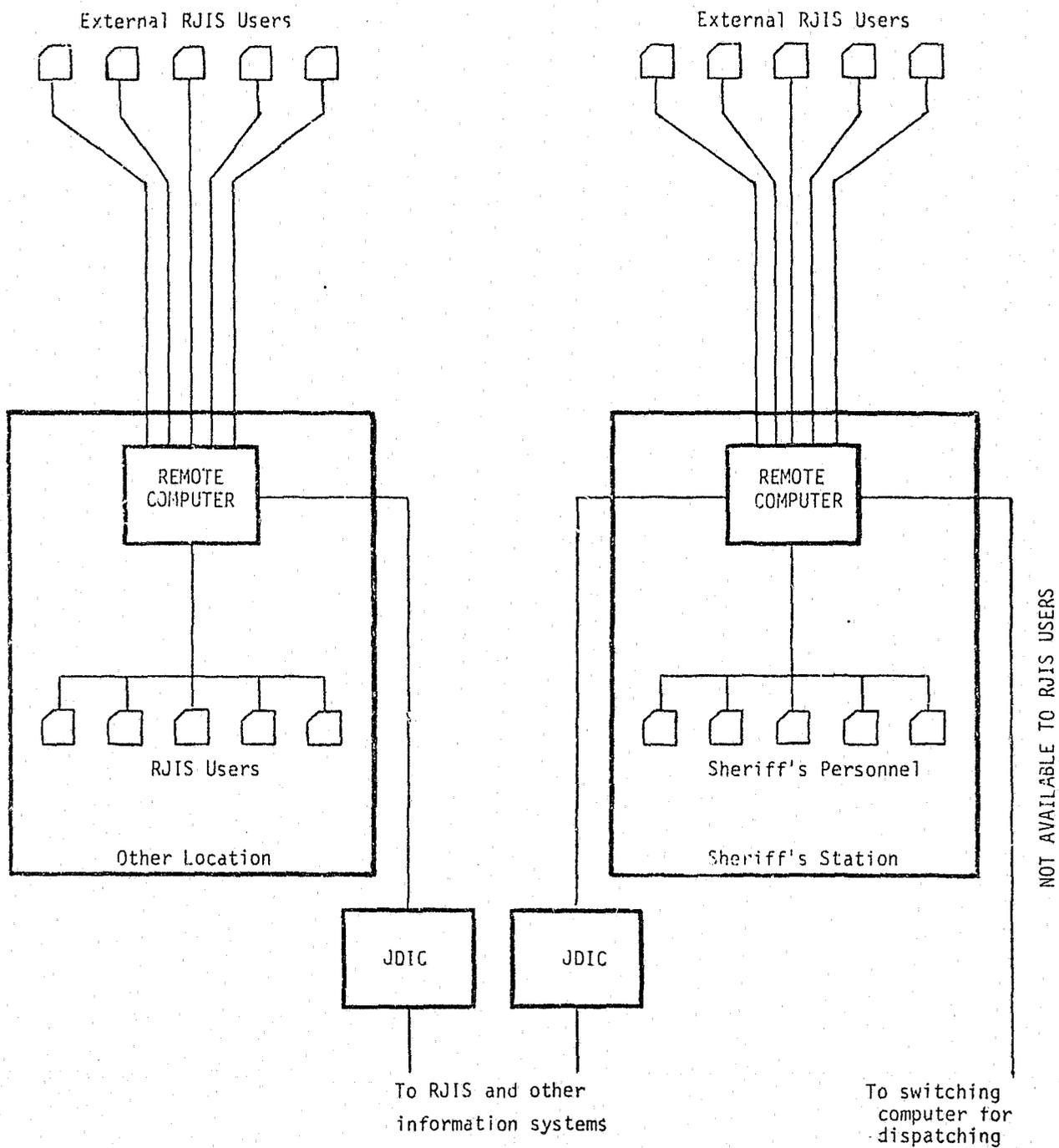


Figure 3. Switching Configuration

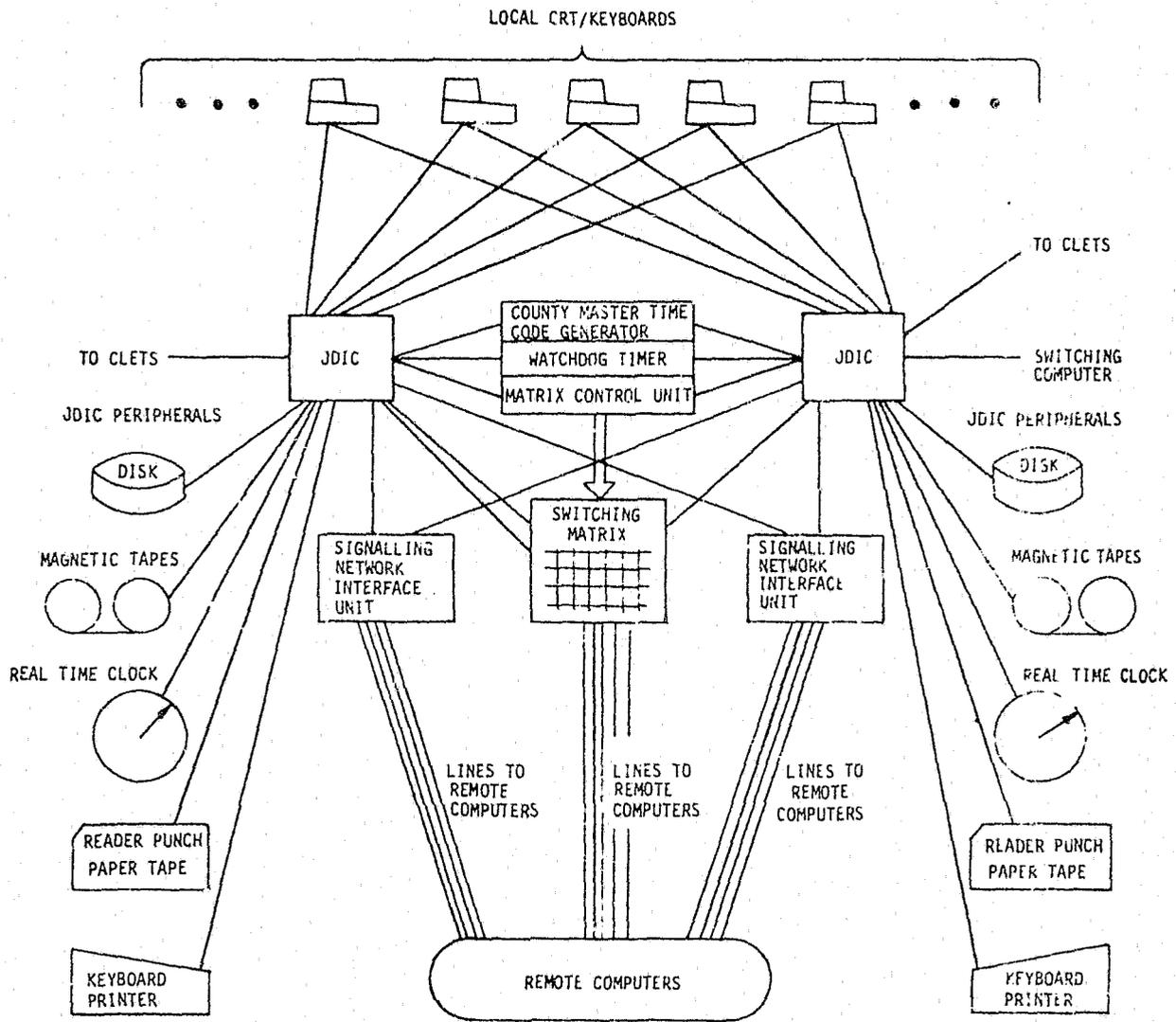


Figure 4. JDIC Configuration

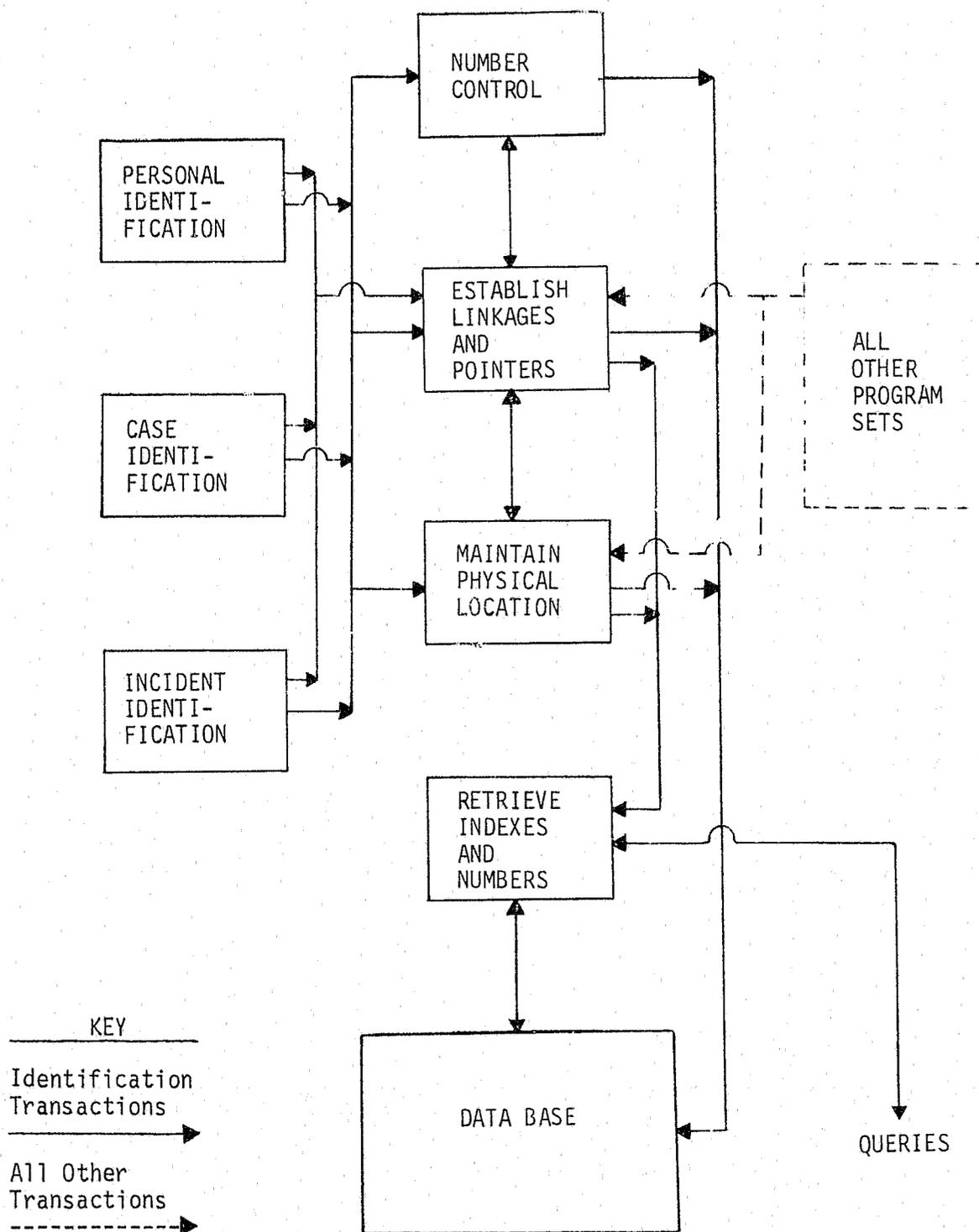


Figure 5. Indexing, Numbering, and Identification Module.

1. *Personal Identification.* This computer program set supports the identification of people. It accepts inputs including name, physical characteristics, and fingerprints and produces information on whether the inputs probably match the personal information of anyone already known to RJIS. This computer program set also associates persons with RJIS numbers and other numbers used by the system.
2. *Case Identification.* This computer program set supports the process of establishing a case in RJIS and adding information to that case. When a new case is established in RJIS, this computer program set establishes a case file and associates the information in that case file with a case number. When action is taken on that case, the computer program set associates that information with the existing case. The computer program set also assures that any associated incident information is permanently preserved in association with other related case data.
3. *Incident Identification.* This computer program set supports the process of establishing a reported crime or incident in RJIS and adding information to the incident file as the investigation of the incident proceeds. Only those incidents for which a suspect is identified and against whom a complaint is requested are of interest to RJIS because only those incidents are associated with cases. (However, other incidents will be maintained in the system for the convenience of investigators and other personnel.)
4. *Numbers Control.* This computer program set assigns all numbers to persons (RJIS numbers), cases (case number), and incidents (incident number). It maintains and updates cycle, sequence, and count information associated with RJIS numbers. It associates RJIS, case, and incident numbers. It also provides the capability to audit numbers previously assigned by RJIS.
5. *Establish Linkages and Pointers.* This computer program set establishes for all of RJIS the linkages and pointers among all files associated with any individual case or incident. These linkages and pointers allow RJIS users to find their way, either automatically or in a step-by-step investigation, to the appropriate data.
6. *Maintain Physical Location.* This computer program set maintains for the entire RJIS the physical location of all information in the system. This function is critical because RJIS will operate on several computers and many shared storage devices, with storage locations subject to change as files grow and are purged.
7. *Retrieve Indices and Numbers.* This computer program set handles all requests to retrieve and display or print out data on persons, cases, and incidents. The computer program set is designed to locate files given either the identifying characteristics of a person, case or incident; or a combination of both number and identifying characteristics. The computer program set will respond to joint queries about two or more related persons, cases, and incidents. It also supports the auditing of previously assigned numbers.

As shown in Figure 5, all identification transactions may use any or all seven of the Indexing, Numbering, and Identification Computer Program Sets, while all other transactions will use the Linkages and Pointers and Physical Location Computer Program Sets.

## STATUS AND HISTORY MODULE

This module performs two major functions: (1) it maintains information on the status of each case as it progresses through the justice system; and (2) it maintains summaries of all cases with which each individual has been associated. When a person

enters the system, an on-line case status file is created; this file contains data which will provide current information on the status of an active case within RJIS. As a status file is created, the on-line history file is searched for an entry on that person. If an entry is found, the current information become part of the status file. If no entry exists, a new history record is created.

All transactions pertaining to the person as his case progresses through the Los Angeles County justice system are maintained and updated in the status file until final disposition. These transactions form an automated register of action or docket recording virtually every transaction in the case and the reason for that transaction. As the case passes major milestones, information is abstracted to the history file creating a RAP sheet which includes disposition information. When final disposition is made, the status file will be moved from on-line storage to off-line storage and only the history file will be maintained on-line. After a predetermined length of time, the history file is also moved to off-line storage, if no further activity has been recorded. Either status or history can be brought back on-line on demand.

The overall structure of the module is shown in Figure 6. It includes six computer program sets:

1. *Input Milestones and Orders.* This computer program set handles all inputs related to actions involved in processing an individual case. As any action is taken to change the status of the case — that is to advance it through the various justice functions — this action and its consequences are recorded for future retrieval and processing. This computer program set and the Input Custody Status Computer Program Set form the basis for the RJIS case-following capability.
2. *Input Custody Status.* This computer program set handles all inputs related to controlling the physical custody of a person in RJIS. Custody status includes confinement in county jail or probation facilities, release on bail or own recognizance (OR), and release on probation, county parole, or work furlough program. This computer program set records any action to change the custody status, physical location, or agency responsibility for any individual whose correctional program is the responsibility of a county agency. As indicated above, this computer program set and the Input Milestones and Orders Computer Program Set, together, constitute the basis for the RJIS case-following capability.
3. *Maintain Status.* This computer program set does all house-keeping necessary to reflect changes in case, custody, or correctional status. Any information that is input is automatically reflected throughout the RJIS files.
4. *Retrieve Status/History.* This computer program set handles all requests to retrieve and display or printout data on case, custody, or correctional status. The computer program set is designed to locate and extract required information given the information desired and the appropriate person and case identification information. Several specific functions are performed: identifying probable violations of summary or supervised probation and automatically notifying the appropriate agencies; and automatically generating various lists and/or court orders that are required during the processing of a case.
5. *Generate Probation Reports.* This computer program set processes all probation reports, assembling the required informa-

*Shared with  
Calendar and  
Scheduling Module*

INPUT  
MILESTONES  
AND  
ORDERS

*Shared with  
Calendar and  
Scheduling Module*

INPUT  
CUSTODY  
STATUS

MAINTAIN  
STATUS

QUERIES

RETRIEVE  
STATUS/  
HISTORY

GENERATE  
ORDERS  
AND  
LISTS

GENERATE  
PROBATION  
REPORTS

DATA BASE

Figure 6. Case Status and History Module

tion and routing it automatically to judge and/or probation officer.

6. *Generate Orders and Lists.* This computer program set processes all lists and orders, assembling the required information and automatically routing it, if required, to the desired recipient or recipients.

## CALENDARING AND SCHEDULING MODULE

The Calendaring and Scheduling Module performs all functions involved in bringing an adult defendant or a juvenile into a courtroom together with a judge or other hearing officer, witnesses, prosecutor, defense attorney, and other persons necessary to conduct the hearing. As a case progresses through the justice system new calendaring information is generated to reflect any new hearing or changes in hearing required by the processing of the case. The information is available in the form of daily and weekly printed calendars, other printed lists, and various displays and printouts generated on request as needed to assist in the calendaring and scheduling process.

A major concern of RJIS designers in this area is to allay the concerns of judges and professional personnel in the courts who may view the automated features of calendaring and scheduling as a restriction of their prerogatives. On the contrary, it will substantially reduce the administrative and clerical activities of both judges and court clerks and thereby provide more time for deliberation on the substantive issues of each case. Furthermore, an override capability will be available to ensure that personnel can make and input calendaring decisions if, in their judgment, these decisions are more suitable than those produced by the system logic.

The overall structure of the module includes six computer programs sets and is shown in Figure 7. Two of the computer program sets, Input Milestones and Orders, and Input Custody Status, are shared with the Case Status and History Module. The four computer program sets unique to Calendaring and Scheduling are described below.

1. *Maintain Calendaring Data.* This computer program set performs maintenance functions on all calendaring data. Receipt of any input that impacts upon the calendaring functions causes this computer program set to make the appropriate changes to the Court Calendar File. The computer program set has the capability of computing estimated hearing duration on the basis of offense, trial type, and number of witnesses or of accepting an estimate of duration as an input. The computer program set responds to changes in the locations at which accused persons receive various court notices; it also assembles the information required to prepare and mail subpoenas.
2. *Retrieve Calendaring Data.* This computer program set handles all requests to retrieve and display or printout data on court calendars. The computer program set is designed to locate and extract required information given the informa-

tion desired and appropriate person and case identification data. Several of these functions, such as printing daily and weekly calendars and associated lists are performed automatically at predetermined times. Others are performed in response to requests for information from calendaring personnel.

3. *Generate Calendars.* This computer program set processes all calendars, assembling the required information and providing for its printing at the appropriate time.
4. *Generate Modifications and Lists.* This computer program set processes all court lists, notifications, and related documents and displays, assembling the required information and automatically routing it, if required, to the desired recipient or recipients.

## MANAGEMENT INFORMATION MODULE

The Management Information Module will provide managers with summary and analytical information which can be used for operational management, planning and scheduling of personnel and facilities, analysis and formulation of policies, and research. This module is capable of producing summary statistical data on-line and more detailed reports on a regularly scheduled batch off-line basis. This module also has the capability of accommodating detailed, one-time only, research requests. An overall structure of the module is shown in Figure 8. It includes seven computer programs sets:

1. *Maintain Exception Control.* This computer program set performs maintenance and update functions upon the status file in areas involving statutory and operational time requirements. The status of individual cases are monitored and dates calculated using pre-determined time limitation factors, helping to ensure that critical time limits are met.
2. *Maintain Statistical Summaries.* This computer program set performs maintenance functions on all statistical data. As entries and changes are made to the files within RJIS, pre-determined statistical information is accumulated. This statistical information is maintained internally and updates the various statistical files.
3. *Retrieve Statistical Summaries.* This computer program set handles all requests to retrieve and display or printout statistical information. The program set is designed to locate and extract the statistical information requested.
4. *Generate Status Reports.* This computer program set processes all reports, accumulates and assembles the required information, and automatically routes it to the appropriate agency. The output reports will be in the form of aggregations, lists, and indices.
5. *Statistical and Analytical Reports.* This computer program set processes all statistical and analytical reports, accumulates, and assembles the required information routing it automatically to the requesting agency. The computer program set generates regularly scheduled reports. It also generates special reports for which the appropriate software has been developed. It has the capability of supporting one-time research efforts for which special purpose software is developed.
6. *Generate Query Responses.* This computer program set processes query requests. Only a predetermined list of queries are recognized. The program set is designed to locate, retrieve, and route the information to the requestor.
7. *Generate Exception Reports.* This computer program set processes all exception reports. The program is designed to locate and retrieve data on cases where previously identified

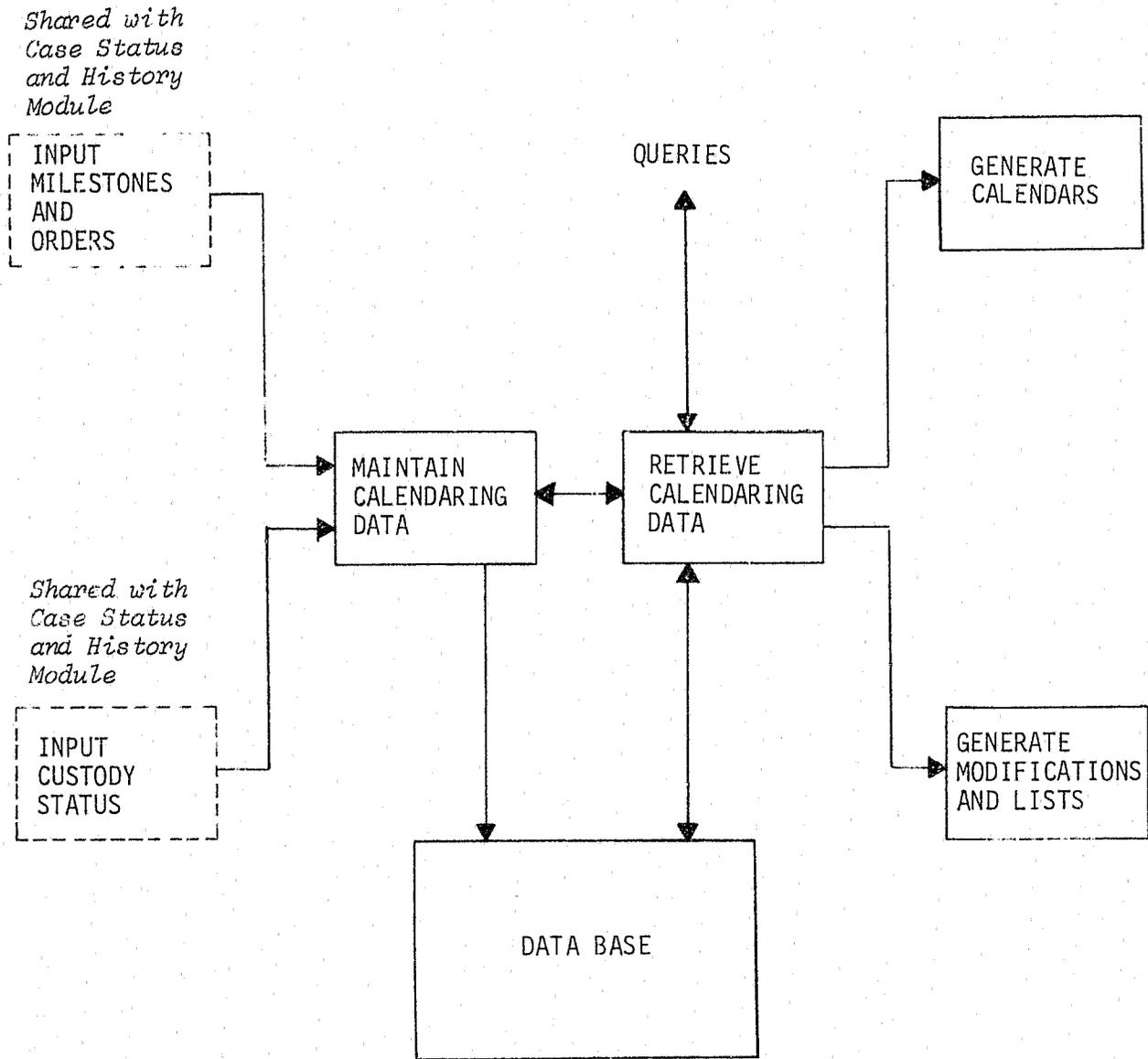


Figure 7. Calendaring and Scheduling Module

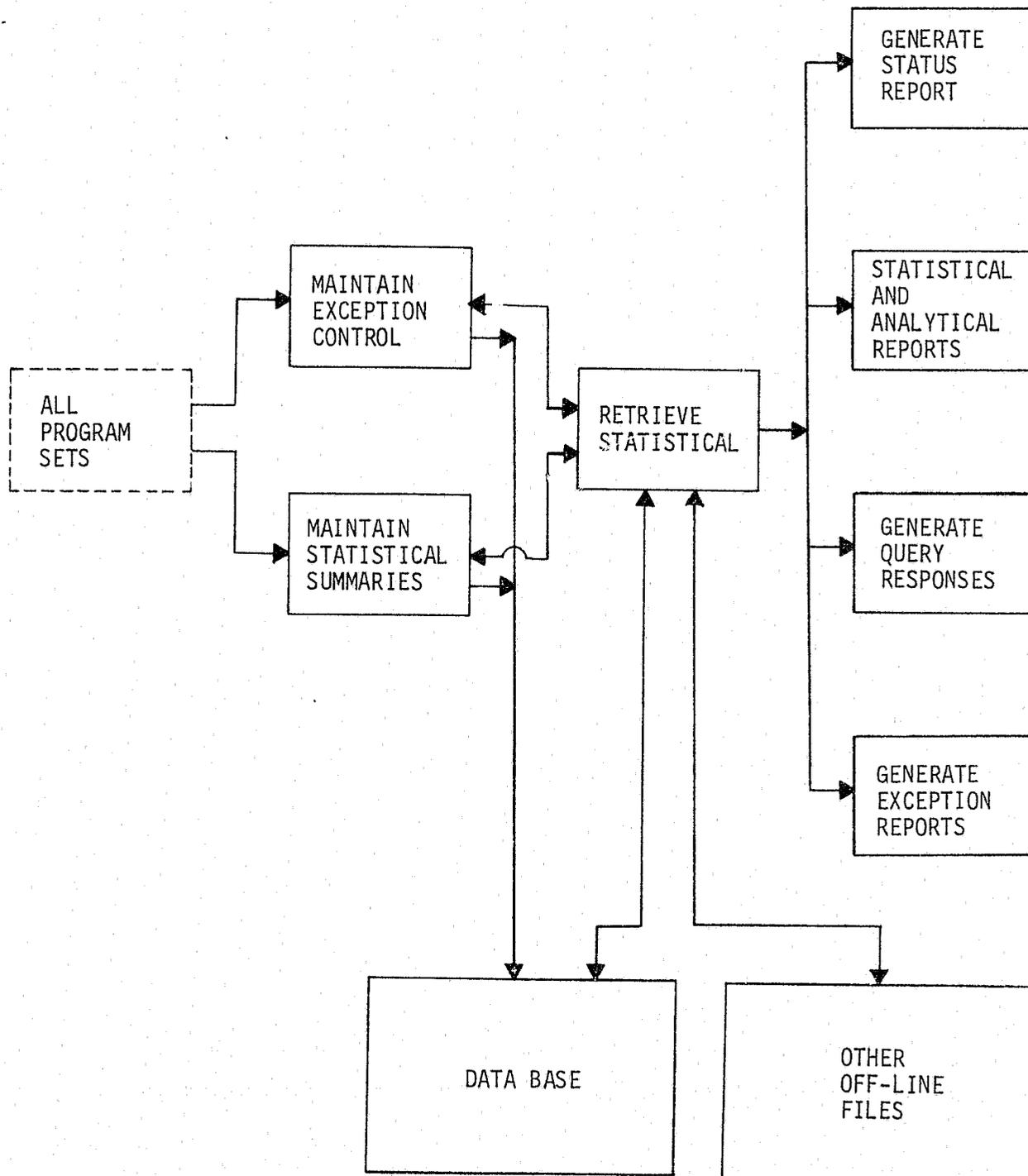


Figure 8. Management Information Module

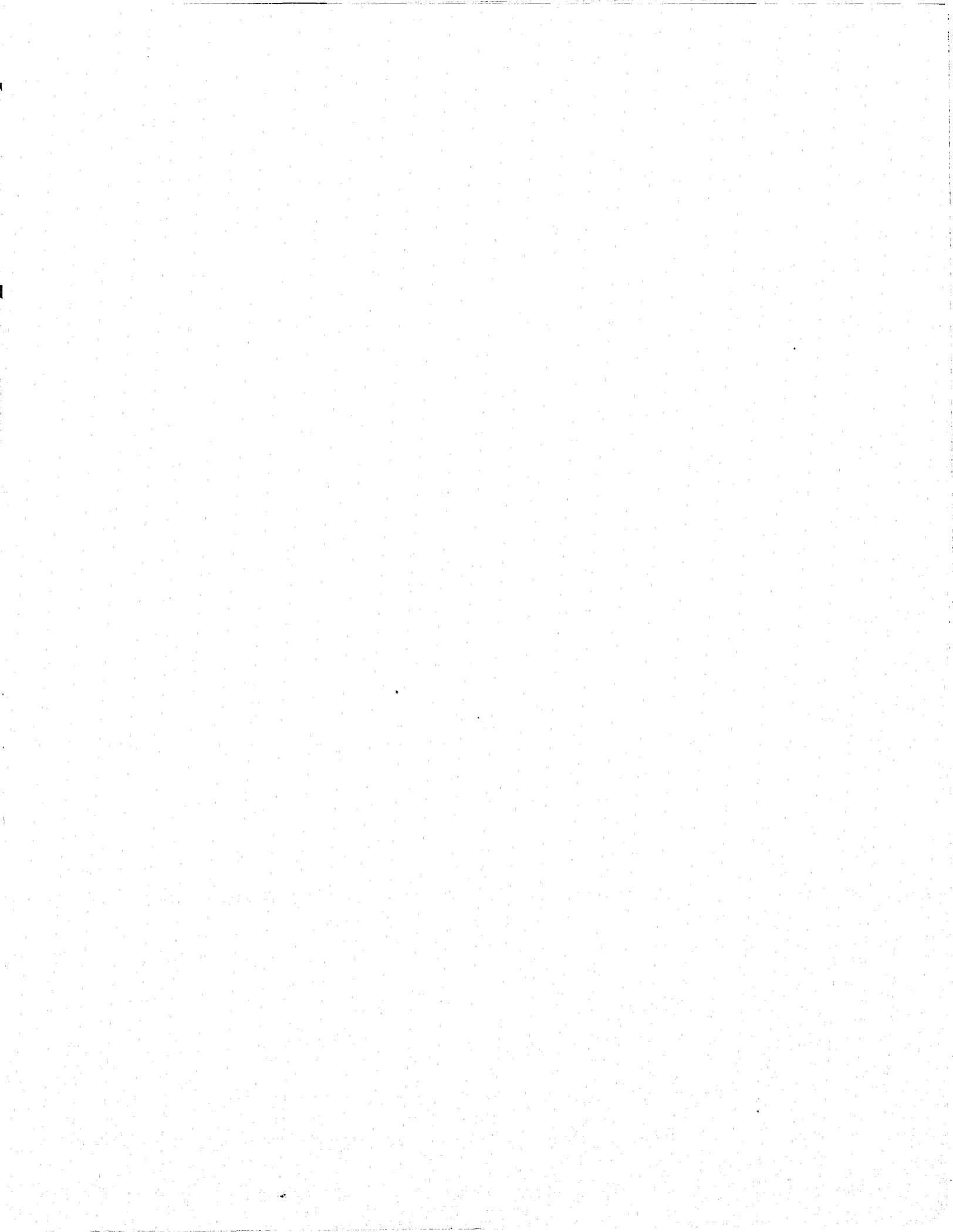
milestones have not been met within the prescribed time periods. Exception reports are automatically routed to the appropriate agency facility.

In addition to the standard RJIS data base, the Management Information Module also has potential access to any compatible data base that is available on magnetic tape. Thus, for example, the module can use Census data as a component of RJIS statistical reports.

#### SUMMARY OF RJIS BENEFITS

Potential benefits of the RJIS case-following concept include reduced clerical efforts, especially

on the part of professional staff personnel; faster access to data without the out-of-file problems that now occur; greater reliability and consistency of data; availability of data, especially for statistical and management purposes, not currently available; and, perhaps most important, improved communications both within individual agencies, which, in Los Angeles County, are decentralized to many separate locations, and among separate agencies. RJIS promises to remove those delays in the criminal justice process that stem from paperwork bottlenecks and to allow agency staffs to save time spent "pushing paper" and to put that time into administering justice.



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