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Westinghouse Justice Institute

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TECHNICAL ASSISTANCE FOR CLARK COUNTY AND ~~CITY OF~~ LAS VEGAS, ~~NEVADA~~ CONCERNING ~~THE~~ JOINT RECORDS COMMAND AND CONTROL SYSTEM AND PROJECT SCOPE

Police Tech and RFP.

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FOREWORD

LEAA Region IX requested technical assistance in examining the Clark County and City of Las Vegas, Nevada, Joint Records Command and Control System and Project SCOPE. In response, the Westinghouse Justice Institute, under the terms and conditions of LEAA Contract J-LEAA-016-72, U.S. Department of Justice, provided Messrs. T. Tamaru and R. Frederickson of Justice Research Associates (JRS) of Costa Mesa, California. This report documents in summary the technical services rendered.

1. INTRODUCTION

The requested technical assistance concerning the Clark County and City of Las Vegas, Nevada, Joint Records Command and Control System (JRCCS) and the Sheriff's Computer Operation for Protection and Enforcement System (SCOPE) became necessary as a result of a plan[1] which was submitted to the Clark County Sheriff's Department and the Las Vegas Police Department, Las Vegas, Nevada.

The JRCCS Security and Privacy Plan is a comprehensive plan to meet the guidelines set forth in Project SEARCH's Technical Report No. 2, "Security and Privacy Considerations in Criminal History Information Systems." Because of the broad scope of these guidelines, the plan is a comprehensive one which will require several hundred thousands of dollars in development cost over a period of several years. This has been of some concern to the Region IX LEAA Region Administrator, and on August 24, 1972, in a letter to Chief Deputy Sheriff, Ray Gubser of Clark County, the Administrator stated that, "In an attempt to resolve the dilemma concerning the cost of implementing your Security Plan for the above referenced grants (#71-DF-927, #71-DF-1051), we will explore all avenues in an effort to reduce the cost ....."

In the same letter dated August 24, 1972, the LEAA Regional Administrator outlined the scope of analysis to be performed under this assignment. The consultant was to:

- Review the "JRCCS Security and Privacy Plan."
- Make a site visit to Las Vegas to view the Joint Records Project and SCOPE.
- Review software of operational security programs in other states and make recommendations concerning their possible transfer to this project
- Finally, submit a report and recommendations.

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[1] "JRCCS Security and Privacy Plan" February 1972, Report No. 2700-001.

2. FINDINGS

2.1 Review of the JRCCS Security and Privacy Plan

The JRCCS Security and Privacy Plan was reviewed by the consultants prior to the site visits to Clark County, San Francisco, and Long Beach. A second review of the plan was made concurrently with the site visit and review of the Clark County Sheriff's SCOPE System.

The purpose of the JRCCS Security and Privacy Plan was to specify a plan for ensuring the security and privacy of criminal justice information to be maintained in the automated data banks of the Las Vegas/ Clark County Joint Records Command and Control Systems. This plan was prepared in pursuance of the Special Conditions No. 9 in Grant No. 71-DF-927 for $168,744 to Clark County, Sheriff's Department; and Special Condition No. 10 in Grant No. 71-DF-1051 for $100,000 to City of Las Vegas, Nevada. Special Conditions 9 and 10 both state that, "Within 90 days of receipt of award, the subgrantee shall submit to LEAA for approval its plan for ensuring the security of information maintained in the system, and assurances providing for consideration of the rights of privacy. The Project SEARCH Technical Report No. 2, Security and Privacy Considerations in Criminal History Information Systems, shall be used as a guide."

It was found that the plan follows the guidelines set forth in the Project SEARCH, Technical Report No. 2, and is a comprehensive plan for ensuring security and privacy to meet the recommended systems policies related to: Data Content, Rules of Access and Usage, Data Dissemination, Rights to Challenge and Redress, and Organization and Administration. Because of its broad scope, the plan contains many changes which are necessary to meet the recommended policy guidelines of Project SEARCH's Technical Report No. 2 but which are not directly concerned with the SCOPE/JRCCS System Software security and privacy programs. As the scope of this assignment was limited to reviewing the software of operational programs in the SCOPE/JRCCS system, only those items that relate to the software security requirements were addressed.

2.1.1 On-Line Processing Program Changes

Extensive edit and verification checks exist in the currently operational SCOPE system. As SCOPE is expanded and modified to develop the complete JRCCS, the existing edit and verification checks should be modified to meet the new JRCCS needs. This task can be done by the existing staff of Clark County.

The SCOPE System should be modified to provide a detailed log of all inquiries and to identify transactions records of all outputs to

users. The logging function for audit trail and data verification should be in complete detail in order to meet the requirements of advising users of any errors or omissions in records previously transmitted. A detail logging out will maintain audit trails on what record was sent to what agency and when. The logging out in detail of all real-time transactions will provide the capability to give each recipient agency a detailed listing of inquiry requests and outputs for any subsequent error corrections. Corrections to records should be initiated by the agency providing the source record to the file. Corrected records should undergo the same edit and format checking as well as a "before" and "after" record content verification.

The current software for SCOPE provides the necessary screening and verification of all inquiries by the use of Inquiry Codes and Operator Code Numbers which perform the passwords to authorize the inquiry type and the individual Console Operator making the inquiry. Terminals and operators are authorized in a predetermined authorization table. Invalid inquiries will not authorize the inquiry or user to have further operation of the console and a message is displayed. However, invalid attempts are not currently logged; they should be incorporated in the logging and audit programs.

A comparison of the Project SEARCH and SCOPE System data elements suggests that not all data elements are compatible. However, from a security and privacy point of view, compatible data elements are not necessary. In fact, incompatible data elements, by their nature, increase a system's security. The consultants feel that the intent of Project SEARCH's guidelines on data element standardization was long-range and aimed at eventually achieving compatible Criminal History Data Bases nationally, which could be a fully computerized national network if standardized data elements were provided in the local, state and national data bases. The complete reformatting and code conversion of data records for interstate transmission is not directly related to security provisions and, while highly desirable from a systems efficiency point of view, is not necessary at this time for the security of SCOPE/JRCCS. Consequently, the consultants concur with the observations of the Regional Administrator that approximately $240,000-$300,000 could be reduced from the JRCCS Security and Privacy Plan.

2.1.2 Batch Processing Program Changes

The following changes or additions to the batch processing programs of the SCOPE System are necessary to a good security plan and should be included in it: listing record corrections, record purging, error notification lists to recipients, maintaining a record of recipients, systematic audit capabilities, and statistical generation features.

However, much of the batch processing tasks can be developed in connection with the transaction and inquiry logging task and audit tasks. The batch processing programs run against an Audit Tape created by the Logging Programs can be developed in languages other than BAL (Basic Assembly Language). COBOL would probably be the best suited language for processing listings and statistics.

The series of Statistical Programs to generate the various management reports are highly desirable and should be planned for. However, since these programs do not directly affect the security aspects of the system, they could be developed by Clark County in-house staff at a later date.

2.2 Site Visits and Contacts with Other Counties and Cities

2.2.1 Clark County, Las Vegas, Nevada Site

The Clark County, Las Vegas, Nevada, site was visited by the consultants together with Arthur H. Fuldner, Jr., of LEAA Region IX on December 18, 1972. Discussions were held with Chief Deputy Sheriff Ray Gubser; B. G. Turbeville, Manager, Data Processing Services; Gordon J. Warner, Programming Manager; and Carroll G. Thompson, Senior Programmer, concerning the security and privacy aspects of the existing SCOPE System and the JRCCS.

The Clark County Data Processing Services are part of the Office of the Comptroller and under his administrative jurisdiction. The facilities, data processing equipment, and personnel, however, are located within the offices of the County Sheriff. The existing hardware configuration is one IBM Model 370/145 with 384KB of core storage, four 2302 and 2403 tape drives, 8 spindles of IBM 3330 DASD, one 1403 Printer, one 2540 Card/Read/Punch, one 270/Communications Adapter, one 2841 Controller, six 2260 CRT's, and four 1050-type remote terminals with one 1053 Printer. The Operating system is IBM-DOS Release 27 with three partitions of core. (F_1 = Power, F_2 = Tele-Processing (TP) (164KB), F_3 = Batch). The TP Monitor is a Multi-Thread FASTER using IBM's BTAM (Basic Teleprocessing Acess Method). The hardware in the Data Center is operated for three shifts, seven days a week.

The primary operational system is SCOPE, which is essentially a Criminal History File for Clark County/Las Vegas and eventually the State of Nevada. The SCOPE File contains approximately 100K records of individuals. It uses a standard IBM ISAM File structure and the host languages are in COBOL and BAL.

There are currently six 2260 CRT devices. Three are in Sheriff's Records, one in the Sheriff's Communications Dispatch, one at the

Sheriff's Public Counter, and one in the Data Center. Also, four 1050-type remote terminals are used. Two are used by the City of Las Vegas Police Department and two by Clark County Sheriff. One 1053 Printer is located in Sheriff's Records to print out the 2260 CRT displays. Inquiries into the SCOPE file from the terminals require that the terminal operators type the Inquiry Code Number and their Operator Code Number as the necessary password. An invalid Code Number will not allow an operator to make an inquiry.

A name-versus-alias cross index is used with a phonetic search capability. No searching on Vehicle License Number, Driver's License Number, or Social Security Number exists currently. Future plans are to incorporate some of these additional cross indexes. The present IBM 2260 CRT's display the password codes to viewers; changes must be made to prevent this. The plan is to convert the 2260 CRT's to the IBM 3270 CRT's which will permit the blanking out of password codes on the displays and make the system secure against casual observers.

All changes and additions to the SCOPE file are printed out and a listing given to the users. All changes are logged out to the 3330 DASD in a "before" and "after" image of the record changed. At the present time the SCOPE system does not have the capability to log out to tape all inquiries, transactions, and invalid inquiry attempts. This feature will be necessary to meet the Special Conditions Nos. 9 and 10 set forth by LEAA concerning their discretionary grants.

From the review of related material, the JRCC System, operational environment, and discussions held with the cognizant Clark County staff during the site visit, it is apparent that a set of recommendations can be made which will allow compliance with both the technical requirements of LEAA and the operational budget of Clark County Data Processing. The issues reduce to:

(1) Compatibility with Project SEARCH, record content and format.

(2) Recording of information dissemination.

(3) Procedures regarding after-the-fact notification of recipients of incomplete or erroneous information previously transmitted.

In all other areas, the JRCCS Security and Privacy Plan submitted by the Clark County Sheriff's Department was found to be in conformance with LEAA's qualifying Special Conditions. The problems remaining are

not capability or intent to conform to requirements, but rather the perceived cost of implementing what the Sheriff's Department understands to be LEAA's requirements in these areas.

To summarize the issues:

Record Content and Format Compability

In all areas of *content*, the Clark County SCOPE system meets or exceeds the information requirements of SEARCH except as follows. Information is not retained on:

- Visible scars, etc.
- Vehicle operator's license number
- Skin tone
- Occupation

However, all omitted items are incidental to positive identification and are often unavailable in the records of law enforcement systems having provision for them. The omission of these items does not substantially reduce the contribution the Clark County record base can make to LEAA's multi-state SEARCH program. Consequently, the requirements for these items can be waived for purposes of qualifying for the subject grants.

In the area of record *format*, Clark County's SCOPE system operates with a different format than that specified under LEAA's SEARCH program. However, there is no requirement that records internal to the SCOPE operating system must conform to the information interchange required by SEARCH. Rather, the interpretation of the requirement is that the system be capable of accepting and sending the appropriate information in the proper format with the LEAA multi-state network. Clark County's responsibility under the qualifying Special Conditions of the subject grants is to insure that file structure and information content be amenable to the application of algorithms capable of accomplishing this interchange in the prescribed form. At the time the SCOPE system becomes part of a multistate system, the application of this capability would have to be current.

From the review of the SCOPE system and from discussions with Clark County's system development staff, it appears that the SCOPE system has been and will continue to be, developed in a way which ensures compatibility with the SEARCH program. Consequently, Clark County should

be informed that there is no current requirement to change record structure (as outlined in the JRCCS Security and Privacy Plan) to qualify for the subject grants. File structure and content need only be maintained in a manner amenable to the application of conversion algorithms to accomplish conformity to LEAA SEARCH requirements.

Record of Information Dissemination

The SCOPE system does not currently keep an audit trail of the dissemination of system information. After a review of the SCOPE system and discussion with system development staff, it was determined that transaction logging audit trail capability for criminal history information disseminated could be prepared to operate in a cost/effective manner by existing staff within their development schedule. Clark County should also explore the feasibility of transferring from other agencies such as City/County San Francisco, or the City of Long Beach, certain programs relating to this requirement of logging and audit trails.

It is felt that a letter from the Clark County Sheriff's Department (confirming their intention to implement audit trail facilities supporting the security and privacy considerations presented in Project SEARCH Technical Report No. 2) would be sufficient to overcome this deficiency.

Procedures for Notification of Recipients of Incomplete or Erroneous Information

Features of the SCOPE system and its operating procedures appear in general to be adequate to prevent introduction of incomplete or erroneous information into the system. The most likely erroneous introduction is information that was incomplete because it was not available or was in error at the source at time of entry into the system. This is a problem of all information systems. The addition of audit trail facilities for the dissemination of criminal history information will provide the means through which records, once transmitted but subsequently found to be in error or to be misleadingly incomplete, can be retransmitted or notification otherwise made. The Sheriff's Department clearly has intention to provide this capability. The site visits and discussions with other Counties and Cities indicate that the capability of logging out all transactions in detail, together with providing the user agencies a detail error listing, is a feasible method for correcting such errors.

2.2.2 City and County of San Francisco, California

A site visit was conducted by the consultants on January 16, 1973, at the City and County of San Francisco Data Processing Center.

Discussions concerning software security and privacy practices were held with Mr. Henry Nanjo, Director of Data Processing, and Mr. Stanley Collis, Manager, Systems Programming. The City/County of San Francisco is operating 2 IBM Model 370/155 Systems, using two COMTEN Front-End Communication Computers to handle all data communication functions. Several highly secure files are currently processed on these systems, consisting of Welfare, Health, Assessor Valuation, Traffic Citations and Arrest Data.

The Traffic Citation File is processed on one of the IBM 370/155s using an ISAM and a Multi-Thread FASTER as the TP Monitor. It has a Logging Out Function, and all transactions are logged out in detail onto tape. The Logging Out program modules appear to be transferable in this system; the City/County representatives would be willing to discuss this possibility with Clark County representatives. They presently plan to write a series of statistical programs in COBOL to process against the Log Tape for various management reports. Programs which process changes against the file are available in a format to ensure that the "before" and "after" images of the changed records will be logged out.

The Arrest Data File is processed on the other IBM 370/155. This system, however, is using a special TP Monitor on BDAM, and is therefore difficult to transfer to another agency. This system also has a logging-out function to ensure that all detail transactions are retained on tape. The logging out program modules are written in BAL.

2.2.3 City of Long Beach, California

Contact was made with Mr. John Hutchison, Director of Data Processing for the City of Long Beach, California, on January 23 and 24, 1973. Long Beach has received a Federal USAC Grant to develop a computer-based Public Safety System which includes a complete Police Information Subsystem. The Police Information Subsystem will be made up of the Investigative Component, Case Reporting Component, In-Custody Component, and the Permit Component. The first phases of the Investigative Component are currently operational on an IBM Model 370/145 machine using 512KB of real storage, 4 spindles of IBM 3330 Direct Access Storage Devices, IBM 3420 and 2400 Tape Drives, Hi Speed Printers and Card Read/Punch Devices. The remote terminal equipment consists of several Sanders 720 CRTs located in the Police and Fire Department facilities.

Under a Federal Grant, Long Beach is using IBM's Operating System with IMS Version 2 Information Management System as the Systems Software. IMS is IBM's proprietary software for data base management systems.

One of its features is a Logging Out to Tape function for audit trail and other security purposes. These program modules, written in BAL, are an integral part of the total IMS software package. However, there is a good possibility that an experienced IMB Systems Programmer might be able to extricate these modules, and convert them for use on the existing SCOPE/JRCCS System. This should be explored with the appropriate IBM representatives as to its cost/feasibility. The specific program modules in IBM/IMS Version 2 that should be considered for conversion are as follows:

DFSFBGNO - Log Initiator
DFSBLOIO - DL-1 Log Interface
DFSIPREO - Prefix Builder
DFSILOOO - System Log Module
DFSFLOGO - Physical Log Writer

As in any program modules that are transferred or converted to another system, some fixed format might have to be accepted. The IMS Record Format Log Tape logs out inquiries, transactions, and changes in detail, and all elements are captured to enable file creation, before-and-after records, and management statistics.

2.2.4 County of San Bernardino, California

On January 18, 1973, contact was made with Mr. Joel Hauser, Director of Data Processing, to discuss the security provisions of their currently operational systems. The hardware used by San Bernardino is an IBM Model 370/155 with one million bytes of real core storage using IBM 3330 Direct Access Storage Devices for its data bases. Three systems which are currently operational which require security and privacy of their data base are: (1) Hospital System, (2) Registrar of Voters System, and (3) the Child Support/Welfare System. Like Long Beach, San Bernardino is using IBM's Operating System with IMS Version 2 as its system software. All transaction details are logged out to a Log Tape for audit and security purposes. Considerable editing of source data inputs reduces the risk of insertion of erroneous data into these data bases. In order to detect erroneous data being transmitted, a detail audit printout from the log tape is given each user so that the using agency can correct any errors and return the corrections for insertion into the data base.

3. CONCLUSIONS AND RECOMMENDATIONS

Based upon the objectives of this assignment and the findings from analysis of the several site visits and contacts, the following conclusions were reached:

(a) The introduction of record structure changes (by reformatting, expanding, and standardizing the existing SCOPE System data elements to be compatible with the Project SEARCH data elements standards) is not directly related to security measures, and is not necessary at this time.

(b) A considerable amount of the on-line program changes and batch processing program changes, suggested in the JRCCS Plan, can be accomplished by providing for a logging and audit trail capability.

(c) In order to meet only the software security guidelines of Project SEARCH, the JRCCS Security and Privacy Plan can be developed and accomplished by Clark County in-house staff, or by outside consultants, or by a combination of both, at considerably lower cost than indicated in the plan.

(d) Operational software to meet most of the Project SEARCH guidelines on audit trail, data verification, inquiry screening and verification, and generation of statistical reports, exists in other Counties and Cities contacted.

(e) Cost tradeoff analysis will be required to determine whether existing software modules should be transferred intact, be modified to meet Clark County needs, or be completely reprogrammed to meet Clark County needs.

Based upon the findings and conclusions, the following recommendations are submitted:

(a) Insofar as record content and format compatibility between SCOPE/JRCCS and Project SEARCH System is concerned, it is recommended that the requirements for these items be waived at this time for the purpose of qualifying for the subject grants. However, it is also recommended that Clark County's SCOPE/JRCCS file structure and content be maintained in a manner amenable to the application of conversion algorithms to accomplish conformity to LEAA Project SEARCH requirements at a later date.

(b) Insofar as the issue of recording transactions, and information dissemination is concerned, it is recommended that a letter (confirming Clark County's intention to implement a transaction logging out and audit trail facility which meets the security and privacy considerations presented in Project SEARCH Technical Report No. 2) be solicited from the Clark County Sheriff's Department. It is also recommended that Clark County investigate the currently operational logging and audit programs of the City/County of San Francisco and the City of Long Beach as to the feasibility of transferring parts of the existing program modules.

(c) Insofar as notifying using agencies of error conditions occurring in the file, dissemination of errors, and the correction of erroneous records is concerned, it is recommended that the logging out and audit trail programs include the capability of capturing all transactions in detail and listing these transactions and error conditions for corrective action by the respective user agencies.

DEPARTMENT OF JUSTICE

INTERNAL ROUTING/ACTION SLIP

TO	BLDG.	ROOM	NAME/TITLE/ORGANIZATION
			NCJRS: ACQUISITION
			LIBRARY
			"OLD" POLICE TA REPORT
			SUBJECT: REVIEW OPERATIONAL SECURITY
			SYSTEM AND SOFTWARE NEEDED,
			FOR CLARK COUNTY AND LAS VEGAS
			NEVADA JOINT RECORDS COMMAND
			AND CONTROL SYSTEM.

☐ RECOMMENDATION/COMMENT	☐ LOG	☐ NECESSARY ACTION
☐ SEE REMARKS ON REVERSE	☐ FILE	☐ COORDINATE
☐ MAKE COPIES (NO.)	☐ SEE ME	☐ PER INQUIRY
☐ RETURN(BY)	☐ CALL ME	☐ INFORMATION

FROM	BLDG.	ROOM
Bob Heck	PHONE	DATE 4-21-76

DOJ

FORM DOJ-359
8-1-74

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