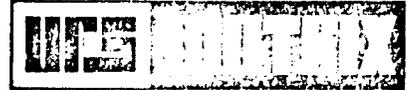


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DESIGNING FOR  
DENNIS C. DEWITT GENERAL MANAGER

December 31, 1974  
MTX: 100/75/090

Peter J. Howley, Contracting Officer  
Regional Operations Division - SA  
Office of Contract Management  
Agency for International Development  
Washington, D.C. 20523

Re: Contract AID/VN-85; Final Report

Dear Mr. Howley:

Submitted herewith are three (3) copies of the final report for Contract AID/VN-85, Health Logistics Support (ADP), which has just been concluded. This report has been prepared in accordance with the contract General Provisions, 16 (c), and completes all technical effort requirements of the contract. In addition, by addendum hereto, a final administrative report is submitted which presents financial and personnel data for the period of August through November, 1974. Final cost figures, including December, 1974 will be included with the final voucher.

We have enjoyed being of assistance to USAID during this program, and look forward to working with you in the future. If we can be of further assistance, please contact me.

Sincerely,

Dennis C. DeWitt

DCD:esg  
Enclosure (3)

Health Logistics Support (ADP)  
FINAL REPORT

CONTRACT AID/VN-85

Proj. 730-11-890 350

December 31, 1974

Prepared for:

Office of Public Health (VN/ND/OPH)  
Agency for International Development  
Department of State  
Washington, D.C.

Prepared by:

Charels T. Modjeski  
Vietnam Project Manager  
URS/Matrix Company  
7245 Arlington Boulevard  
Falls Church, Virginia

## FORWARD

This report, comprising the Final Report for Contract AID/VN-85, Health Logistics Support (ADP), presents an over view of the requirements of this support program, a chronological summary of the technical support activities provided to the USAID Public Health Division Logistics Branch and the Vietnam Ministry of Health ( Directorate of Logistics). On site technical support was provided by personnel of the URS Corporation during data systems design, programming, test and early operation, and included both didact and on the job training of Vietnamese personnel. A brief summary of the conclusions which were reached as a result of this effort are incorporated in the final section of the report.

## FINAL REPORT Contract AID/VN-85

### A. Introduction

Contract AID/VN-85 was awarded to URS Corporation on April 20, 1970. The contract called for contractor to provide the USAID Public Health Division Logistics Branch and the Vietnam Ministry of Health (MOH) Directorate of Logistics with an in-house capability of data systems analysis, design and logic that would:

1. Maintain the ADP sub-systems already developed, specifically: the medical catalog file; the drug and therapeutic index; the authorized/available equipment density file; the daily MILSTRIP/FEDSTRIP procurement control report; and the logistics procurement status report. These sub-systems were known as PH1 (catalog reporting), PH2 (equipment reporting), and PH3 (procurement reporting).
2. Provide the system design for:
  - a. A financial inventory accounting and reporting sub-system to furnish stratified financial management data by stock class on all medical and medically-related commodities procured by USAID and/or MOH.
  - b. An automated requisition processing and stock accounting sub-system that would permit establishment of financial limitations on authorized customers of the system.
  - c. A consumer budgetary and financial control sub-system that would permit establishment of financial limitations on authorized customers of the system.
  - d. A sub-system that would provide a medical logistics performance report that would document the workload and statistically evaluate performance.
  - e. Develop detailed corollary bilingual narrative procedural instructions covering input requirements and utilization of outputs for all of the sub-systems.

Development of this system was known as PH5, Ministry of Health/Medical Logistics System. Initial programming of this system started on an IBM 360 MOD 30 64K of core, a half 2314 disk unit (4 drives) and 6 tape drives under DOS at USAID/ADM/ISC. Later the equipment was upgraded to a MOD 40H with 256K of core and a full 2314 disk unit (8 drives) utilizing DOS and later OS/MFT. In late 1973 and early

1974, contractor coordinated the transfer of the system from ISC to the Office of Prime Ministry/Computer Center (OPM/CC) utilizing OS/MVT/HASP on a MOD 50 with 512K of core, 2 full 2314 disk units (16 drives) and 12 tape drives.

The design specification incorporated the latest techniques in system design, programming, and file construction and utilization, i.e., ISAM, that contractor personnel had gained in the past while working on large scale logistics systems, i.e., Combat Service Support System (CS3).

## B. Historical Synopsis

### 1. April - December 1970

Contract personnel Roger Scaggs, manager/data systems analyst, Lou Ann Scaggs, secretary, and William Huffmaster, management analyst, arrived in country in early May. A local national, Nguyen Bao Nghia, was hired in July as an administrative officer and translator.

The first two months were spent in organizing the office work area and holding meetings with USAID/PH/LOG, USAID/Information Systems Center (ISC) and MOH/LOG personnel to determine user requirements and guide lines needed to develop the system design and determine the responsibilities of each organization. During these development discussions the decision was made to provide bilingual procedures (English and Vietnamese) and a program design calling for implementation of the system in four phases (this was later changed to three phases with 3 and 4 being combined). Phase I of the system provided for the Basic File and Catalog Data; Phase II provided for requisition and procurement status; and Phase III provided for asset and requirement data, FIA, equipment and customer credit reporting. The design was to include all the required information needed by ISC personnel for programming; e.g., input record, output record and file descriptions, a data dictionary, sample reports showing report layout and content, and subprocess descriptions with general flow charts.

During this period ISC was phasing over from contractor analyst/programming support to in-house Vietnamese capability. During the development stages (all of Phase I and some of Phase II) this hampered system implementation since ISC personnel lacked the experience with current programming techniques, ISAM file processing, and the concept of programming and testing under an integrated system concept as opposed to "stand-alone" programs.

The Phase I design specification took two months to complete and was turned over to ISC for programming by the first of August, 1970. Coding and program

compilation was completed in late November with most of the programs completing individual testing in December. User Procedures for Phase I were completed by December. The design specification for Phase II was completed by December, taking four months to complete.

The contract was amended on July 2, 1970 (completion date to October 1971) to provide for an additional data system analyst to compensate for the loss of an ADM/MS/ASC analyst originally scheduled to work full time with the contractor personnel. Elmer Homann, the additional analyst, arrived in late August, 1970.

Problems encountered in maintaining PH1 and PH3 systems included tape drive malfunctions, bad tapes, program errors and improper handling of input data. The PH2 system was discontinued early in the period because of non-use.

The MOH Director of Logistics designated one MOH pharmacist to work full time with the URS contract personnel so that he would be able to assume the role of ADP coordinator as a special assistant to the Director. In addition, the MOH Director designated four employees as prospective trainees for ADP programming classes to be sponsored by ADM/ISC.

## 2. January - December 1971

During January, Phase I training in the utilization of the User Procedures was completed. Phase II programming assignments were made, the team consisting of a lead programmer (working half days), one experienced programmer and four trainees. All MIF coding sheets were completed and ready for processing in Phase I. Phase I was still in individual program testing. Phase III design was 50% completed.

In February a decision was made (because of delays in programming, testing and implementation) to combine Phase III and IV. This resulted in some further delay in the completion of the combined Phase III design. Phase II program coding was started. The printing of Phase I User Procedures was completed and copies distributed. There was no change in the status of Phase I testing, due to poor turn around and priority for other systems (Land Reforms). A field trip to CTO branch depot was made by Mr. Scaggs and Mr. Nghia. Mr. Huffmaster made a consultation trip to the United States to obtain new information on system design concepts and discuss possible contract modifications.

Very little progress in testing was made during March due to down time for upgrading the computer to a MOD 40.

In April some Phase I system testing was completed. Most Phase II programs were ready for testing and the Phase III design specification was approximately 75% completed. Mr. Nghia, local employee, terminated his employment for personal reasons and was replaced by Nguyen Van Giap.

Phase II User Procedures were completed in May. Phase I systems testing continued to be hampered by long turn around. Phase III design specification reached 95% completion.

Mr. Homann made a consultation trip to the United State in June to obtain information on DOS to OS conversion and new design concepts and enhancements, and to brief selected individuals for possible assignment under a contract extension. Phase III design specification was completed. The system test of Phase I was still having problems and poor turn around.

Phase I made its first production run on July 29, 1971. Phase III User Procedures were 30% completed. Some Phase II programs were producing test results. Phase III programming requirements were being studied by ISC programmers. PH3 system was experiencing problems with production runs. The contract was amended and extended.

In August 1971, Charles Modjeski, data systems analyst, arrived to continue contract support until October 1972. Phase I was in full production with minor system problems occurring. PH1 was discontinued at this time. Phase II programs were in stages of individual testing. Phase II User Procedures were distributed and the Phase II training class was started. Phase III programming assignments were made with only 3 full time ISC programmers working on the system. On-the-job training and other assistance was provided to MOH and USAID personnel in the management of the Phase I system.

September saw Phase II programs still being tested, the coding of Phase III programs started and the completion of Phase II training.

In October Phase II User Procedures were completed. Mr. and Mrs. Scaggs completed contractual requirements and returned to the United States. Phase I was running with no problems, OJT continuing. Mr. Huffmaster completed contractual requirements and returned to the United States in November, leaving two data systems analysts and one local on site under contract; Phase I production was running with no problems and Phase II was still in testing.

Phase II testing in December was delayed by hardware problems, bad tapes and tape drive problems and loss of two current updated programs from the source library.

### 3. January - December 1972

January - Phase II programs were still in individual testing, recovering from the previous months problems. Phase III User Procedures were turned over for printing.

February - Phase II started system testing; conversion from DOS to OS proceeded slowly since other systems had priority. Phase III programming was approximately 40% completed. Extensive assistance was provided to ISC programmers in testing Phase II.

March - Phase II system testing was hampered by data base update problems and an apparent compiler bug. Programming on Phase III was 45% completed.

April - Phase II system testing continued to be affected by poor turn around. Phase III programming reached 90% completion. Local employee Mr. Giap terminated employment for personal reasons. Mr. Homann completed contractual requirements, reducing contractor personnel to one data analyst.

May - The Phase II system was used on a limited basis to build various files required by the system. Due to changes in MILSTRIP transportation charges, Phase II implementation was delayed until July so program changes could be made. Phase III programming reached 95% completion.

June - Phase II program modifications and testing were completed during "hands-on" operation of the computer by both contract and ISC personnel on two successive weekends. Phase III programming at 99% completion.

July - Phase II went operational with minor problems and the loading of open procurement history from PH3 started. Use of the PH3 system was discontinued. Conversion from DOS to OS continued.

August - The Phase II system completed processing of open PH3 history with only minor production problems. Conversion to OS was completed and testing started.

September - Phase II production running with no problems. Phase III in testing stages. Some Phase II OS testing was completed but results were poor requiring several repetitions of some production runs. Printing of Phase III User Procedures was completed. Contract was extended to December 1972.

October - Land Reform System continued to have priority on computer time and as a result little Phase II OS testing or Phase III program testing was accomplished. Phase II programs requiring modification for Phase III were 50% completed.

November - Some Phase III testing was completed. Phase II production running with some problems. Poor turn around and backlog affected test results.

December - Phase II system testing under OS was completed, with minor program changes required. Problems with Land Reform system created a large backlog and hampered other testing. The contract was extended until February 1973.

During this period, approximately 70% of contractor personnel time was spent working directly with the ISC programmers in interpreting Phase II and Phase III systems design, preparing test data and test files, checking program test results, preparing and correcting JCL and making program changes. The conversion of Phase II, from DOS to OS, the system testing and the program changes required was handled by the contractor so that ISC programmers could devote all their time to Phase III testing. The remaining time was directed to training, both didactic and on-the-job, of MOH, USAID local hire and USAID direct hire personnel in utilization of the system outputs and generation of system inputs. During the latter part of the period, one MOH individual started programming class.

#### 4. January - December 1973

January - Land Reform system problems, resulting in priority on computer time, and reassignment of 2 of the 3 ISC programmers to another system resulted in no significant change in Phase III testing or Phase II OS testing.

February - TET holidays and problems in other areas resulted in no significant change in system status. Contract extended until December 1973. Operational problems occurred in Phase II due to use of wrong input tapes.

March - Phase II system testing under OS producing good results. Operational problems with Phase II production reoccurred.

April - Phase II system test under OS was completed; parallel runs yet to be completed. Phase III training was started. A repetitive hardware error caused a backlog of jobs.

May - The hardware error continued for most of the month. Parallel production runs were completed under OS by contractor and Phase II shifted to production under OS. Phase III programs were still in individual program testing. Seventy percent of the Phase II programs requiring modifications for Phase III were tested and implemented in the Phase II production system under OS.

June - July - No major change took place in the status of Phase III testing, due to poor turn around or hardware problems. Phase II production under OS running with no major problems.

August - One ISC programmer terminated, leaving two experienced ISC pro-

grammers on the system. MOH personnel (one analyst and four programmers) in OJT after completing schooling. Phase III started system testing with minor problems.

September - Phase III system testing producing good results. Preparations for transfer of the system from ISC to the OPM/CC were started.

October - Phase III of the system became operational. System transfer work continued.

November - Phase III production continued, with operation errors and space allocation for disk files being the major problems. System transfer work approximately 50% complete.

December - Transfer work continued. Some backlog of system input remained at the end of the month due to production scheduling problems.

During this period 80 - 85% of contractor time was spent working directly with the ISC programmers, with the remainder spent working with MOH personnel in OJT.

#### 5. January - December 1974

January - CPU errors and disk space allocation problems created a large backlog of input data at ISC. System transfer to OPM/CC was completed and testing was started. Contract extended to June 1974.

February - March - Problems with production continued. These problems were primarily machine down time, tape errors and disk drive errors, large amounts of input data, and input backlog. Limited test results were achieved with the system at OPM/CC due to very poor turn around (two tests in two weeks). A larger than expected volume of input customer data was rejected by the system creating a peak manager workload.

April - May - Testing completed at OPM/CC in late April, files were copied and production shifted to OPM/CC in early May. One MOH programmer started analysis class and two additional MOH personnel began programming class. Other MOH personnel continued OJT on the system, and studied related material at OPM/CC.

June - July - Previously encountered problems with production at OPM/CC, mainly due to tape or disk drive failure continued during this period. Backlog that remained in May was processed in June. Medical Logistics System was accepted by OPM/CC. Program changes required by change of an activity address were completed during this period. MOH personnel continued OJT in management of the system.

Delay noted in the receipt of system output on several occasions.

August - September - Tape or tape drive problems continued during this period. Priority for computer time by other systems resulting in untimely production runs. A complete system review with the MOH personnel, two analysts and five programmers was started. Program changes required for the change from FSN to NSN were completed in late September. A backlog of input data developed while processing program changes; low priority on computer time delayed processing.

October - November - Problems in obtaining a higher priority for processing production runs, in addition to tape and tape drive problems, created a severe backlog of input data during this period. A meeting between MOH/DOL and OPM/CC director improved operation runs in late November. Computer time during the last two weeks in November was devoted to running MLS production jobs to clean up the input backlog, more than 15 separate production runs.

MOH analysts and programmers, with the support of two ISC programmers, provided around the clock on-site support to handle any operation errors that would occur (mainly bad tapes and drive malfunctions). Remaining contractor personnel returned to the United States in late November.

During the last five months contractor personnel worked directly with the MOH analysts and programmers to help them learn the system and develop a better understanding of system functions. Support also continued in the OJT area in helping MOH personnel develop management techniques.

### C. Major Milestones

April 1970 - Contract awarded.

May 1970 - Contract personnel arrive.

August 1970 - Phase I design specification completed.

December 1970 - Phase I programming completed; Phase I User Procedures completed; Phase II design specification completed.

March 1971 - ISC upgrades computer.

April 1971 - Phase II programming completed; Phase I in system test.

May 1971 - Phase II User Procedures completed.

June 1971 - Phase III design specification completed.

July 1971 - Phase I operational

October 1971 - Phase III User Procedures completed.

February 1972 - Phase II in system test.  
May 1972 - Phase II ready for production except for MILSTRIP changes.  
July 1972 - Phase II operational; conversion from DOS to OS started.  
November 1972 - Phase III programming completed.  
April 1973 - Phase II testing under OS completed.  
May 1973 - Phase II operational under OS.  
August 1973 - Phase III in system test.  
September 1973 - System transfer from ISC to OPM/CC started.  
October 1973 - Phase III operational.  
April - May 1974 - Testing at OPM/CC completed, operations shifted to  
OPM/CC.  
October - November 1974 - MOH analyst and programming personnel assume  
full system responsibilities.  
December 1974 - Contract completed.

#### D. Conclusions

As indicated by the preceding, although the development and design of the system proceeded within the time frames agreed upon by URS and PH/LOG programming, testing and implementation of the system by ISC did not. The major reasons for these delays were the use of inexperienced programmers during the development stages; the lack of priority on computer time for compiling, testing and correction of problems; and reoccurring hardware problems (tape, disk and CPU). However this benefited the MOH because it allowed all of its analysts and programmers to complete the required training classes and spend time with the contractor learning and changing the system. Also they gained valuable experience in helping with the system transfer from ISC to OPM/CC. The MOH manager benefited from the additional time spent by the contractor in direct on-the-job training, with old and new personnel. It is expected that the additional time spent with the MOH personnel in working with the system under contractor guidance will result in a better understanding of the system. This should promote more efficient management and maintenance of the system.