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## AMIS - ACQUISITION MANAGEMENT INFORMATION SYSTEM PROBLEMS AND PROMISES

HAMED KAMAL ELDIN
Summer Research Faculty Program
Air Force Office of Scientific Research

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Prepared for:

Air Force Business Research Management Center Wright-Patterson AFB, Ohio 45433

#### AMIS - ACQUISITION MANAGEMENT INFORMATION SYSTEM

### PROBLEMS AND PROMISES

## Table of Contents

		. Page
I.	INTRODUCTION	1
11.	PURPOSE OF AMIS	1
Щ.	PRESENT STATUS OF AMIS	2
	A. AMIS ACHIEVEMENTS	2
	B. PROBLEMS AND RECOMMENDATIONS	<b>.</b>
	1. Management Support	3
	2. User Interaction	3
	a. General Communications	4
	b. Air Force	4
	c. AFSC HQ	5
	d. AFCMD	6
	e. AFPROs	7
	f. Buying Activities	7
	3. Systems Analysis	10
	a. Inputs	10
	b. Processing	10
	c. Data Base	11
	d. Outputs	12
	4. Systems Support	13
	a. Training and Orientation	13
	b. AMIS Manuals .	14
	c. AMIS Monitors	15
	d. System Awareness	15
III.	FUTURE OF AMIS	16
	A. IS AMIS AN INFORMATION SYSTEM?	16
	B. AMIS - INFORMATION RETRIEVAL SYSTEM	17
	C. AMIS - MANAGEMENT INFORMATION SYSTEM	18

# AMIS - ACQUISITION MANAGEMENT INFORMATION SYSTEM PROBLEMS AND PROMISES

#### I. INTRODUCTION:

AMIS, like any relatively new system, has many successes and failures.

AMIS management must spread the word about its achievements while trying 'to resolve the problem areas.

The purpose of this report is to discuss the present status of AMIS; the positive and negative aspects of the system, and to present recommendations for effective utilization of the system. The report also explores the future of AMIS and recommends short-term and long-range plans for its implementation.

#### II. PURPOSE OF AMIS:

AMIS has been developed by Air Force Systems Command (AFSC) to provide:

- 1. AFSC response to the Department of Defense Military Standard Contract
  Administration Procedures 4105.63M (DOD MILSCAP) effort.
- 2. Automated support for Air Force Contract Management Division (AFCMD) payment function.
- 3. On-line Management Information System (MIS) capability for AFSC users at all levels.

#### Did AMIS achieve its purpose?

Today, at its present status, AMIS is a straight retrieval system with capabilities to serve the first two objectives mentioned above. The main thrust of the system is to provide capabilities for exchanging existing contractual data in an automated standardized format with the other components of DOD.

AMIS is not a MIS; a more appropriate name for this system would be Contract Information Retrieval System. AMIS today does not effectively accommodate the third objective mentioned above.

#### III. PRESENT STATUS OF AMIS:

#### Prerequisites for a system's success

Most successful systems have the following prerequisites in common:

- 1. Top management support is essential.
- 2. A system succeeds when it satisfies users needs rather than a directive from above.
  - 3. A good system documentation and training program.

These three yardsticks will be used in evaluating AMIS successes and failures.

#### A. AMIS ACHIEVEMENTS:

- 1. AMIS has been more effective in the divisions where management support has been observed. The Space Division, Los Angeles AFS, CA is an example where AMIS was accepted by top management. Consequently, frequent use and increased dependence on AMIS led to the success of its implementation.
- 2. To a great extent, AMIS successfully implements MILSCAP. If AMIS was not available, another automated system must be developed for this purpose.
- 3. AMIS has standardized the preparation of AFSC contracts in the Uniform Contract Format (UCF) as required by the Defense Acquisition Regulation (DAR). Source Data Automation (SDA) is the AMIS method of automatically capturing contractual data in UCF during the preparation of the forms.
- 4. AMIS provides support for AFCMD for the disbursement function. It provides complete funding data on the contract and serves as the check and balance on contract obligations and expenditures. A by-product of AMIS

compliance with DAR has made AMIS a useful tool in procurement training.

5. AMIS has provided valuable services for many users in the last few years. There is no doubt that it has been used more and more every year. Actually, in the last three years (May 79 to May 82) the number of queries received by AMIS increased from 5,000 to approximately 18,000 which is an indication of continued improvement of the system utilization.

#### B. PROBLEMS AND RECOMMENDATIONS:

Considering the above prerequisites for a system's success, AMIS needs improvements in top management support, users satisfaction and systems documentation and training. The following paragraphs will address these problem areas and present recommendations for system utilization/improvement.

#### 1. Management Support

Top management support is the main prerequisite for a system's success. The Space Division is an example where top management support contributed to AMIS success.

#### Problems:

- 1. There appears to be a lack of HQ AFSC interest or emphasis on AMIS.
- In the Comptroller's office top management expressed its support for AMIS. However, middle management seems less positive toward AMIS.

Recommendation: Start a vigorous campaign to publicize AMIS. Spend more time contacting and encouraging top and middle managers to use the system. Emphasize what is in it for them.

#### 2. User Interaction

A successful management information system must be responsive to user needs. AMIS was designed to comply with the regulatory requirements of Uniform Contract Format and MILSCAP, not the information needs of its users. AMIS provides multi-users the ability to interact at near real

time through the common medium of automation. AMIS possesses the capability to provide accurate, complete contractual information to these users; however, its full potential has not been achieved.

Implementation of the accompanying recommendations in response to user needs will permit AMIS to achieve its MIS potential.

#### a. <u>General Communications</u>

Problem: The lack of interaction between AMIS users and the AMIS office contributes to the inability of the AMIS staff to appreciate user needs and thereby make clarifications and corrections to the system and its procedures.

#### Recommendations:

- The AMIS office must seek dialogue with its users to ascertain their needs, problems, recommendations and experiences. The results of this communication should be used to design the required capabilities in AMIS.
- 2. Following the implementation of any changes, user feedback should be solicited to measure success or failure of the change.
- 3. Communications interaction between AMIS users should be encouraged to solicit and identify common problems, alleviate misconceptions or correct errors.
- 4. Identify new problem solutions, queries, capabilities and system status through a users' bulletin that can be accomplished by reinstating the now defunct NEWS data base.

#### b. Air Force

<u>Problem</u>: The Air Force is not totally in compliance with MILSCAP. AFLC and other AF Commands do not presently have a MILSCAP compatible system.

Recommendation: Perform analysis to determine if it is feasible to

use AMIS as a MIS first at Air Force Logistics Command

(AFLC) and, if successful, at all Air Force Commands.

#### c. AFSC HQ

Problem: AFSC's mission is to develop, acquire and deploy new weapon systems. However, AMIS does not provide AFSC management with accurate information concerning AFSC acquisitions. The data stored by AMIS does not accurately portray prior contract activity and current status at the time information is requested. The AFSC staff cannot rely on Command Management Information System-Contract (CMIS-K) products and therefore must use manual communications with each activity.

#### Recommendations:

- Analysis be initiated to improve the quality of the AMIS data that underlies CMIS-K and Undefinitized Document Control (UDC) reports. Once the data provided by CMIS-K and UDC is reliable, AFSC can utilize AMIS as a true MIS without manual reports and telephone communication.
- 2. Implement a pre-award data base for each of the buying activites and AFPROs to give the AFSC staff a better view of the entire acquisition process from requirement initiation through contract award to contract closeout.
- 3. Analyze the needs of AFSC management and staff to perform its acquisition mission. Develop pre-award milestone tracking capability so that AFSC management can monitor contract placement, progress and thereby reduce the need to verbally contact each buying activity.

#### d. AFCMD

Problem: AFCMD has assumed a disproportionate role in the operation of AMIS. Its disbursement function has been the focus of AMIS programming and functional support and AMIS staff assistance visits. AFCMD has been permitted too much control over AMIS data. They have reassigned ACRNs, adjusted line item data, paid funds from wrong accounts and closed out contracts without the concurrence of the cognizant PCO or ACO. The emphasis on serving AFCMD has contributed to the buying activities resentment of AMIS.

Recommendation: Develop a more balanced support approach to all AMIS users.

Require AFCMD to coordinate any proposed changes in AMIS data that is within ACO/PCO purview in accordance with AFSC Regulation 70-13. In those situations where obligations or fund citations in the data base are changed contrary to the written contractual document, PCO authorization must be required.

<u>Problem:</u> The number of documents requiring hand abstraction into AMIS exceeds the resources available.

Recommendation: Investigate why so many documents are not being entered through SDA procedures but are being mailed directly to AFCMD for input. Buying activities and AFPROs bypassing the SDA process need to be educated as to the system-wide advantages of SDA input.

<u>Problem:</u> AFLC Priced Spare Parts Lists (PSPLs) and Provisioned Item

Orders (PIOs) are mailed to AFCMD for abstraction since AFLC

does not have SDA input capability. Due to the large number of line items associated with provisioning, the abstraction method of input is not efficient.

Recommendation: Develop direct input of PSPLs and PIOs to AMIS from the contractor's provisioning system.

#### e. AFPROs

<u>Problem</u>: The AMIS relationship with AFPROs is hindered by AFCMD's control of AFPROs. There is uncertainty as to who is responsible for AMIS training and staff support to AFPROs.

Recommendation: Authorize AMIS to deal directly with AFPROs in regard to AMIS matters.

<u>Problem:</u> AFPROs have complained that they do not have control of inputting some of their data into the data base as AFCMD has taken that responsibility away from them. This has caused errors in the input of data.

Recommendation: Determine what AMIS tasks of inputting data should be returned to the AFPROs from AFCMD.

#### f. AFSC Buying Activities

Problem: Large volume support equipment orders with hundreds of line items cannot be rapidly input into AMIS through use of Source

Data Automation forms. The typing of hundreds of SDA forms and the resulting error messages can delay the order several weeks.

Recommendation: Develop a method to input Priced Support Equipment Lists

(PSELs) and unpriced Provisioned Item Orders (PIOs) directly into AMIS via computer tape or from the contractor's computer system.

Problem: Buyers/PCOs have complained that preparing a contractual document requires more pages because only four items can be listed on an SDA form.

Recommendation: Analysis be performed during the development of IDI software to permit two important things. First, more items could be listed on a form. Second, the formatted screen be increased to permit more items on the screen. The IDI should be designed to print out the necessary information on bond paper.

Problem: AMIS lacks adequate quality control procedures at buying activities.

Present administrative contract review and AMIS edits and validations do not detect all changes to the hardcopy contract.

Recommendation: Contract review personnel should be trained in AMIS procedures and the relationship of the Uniform Contract Format to AMIS. Reviewers should recognize those changes that require AMIS adjustments. Also, they should query AMIS to verify that the proposed adjustment to the data base is correctly represented on the hardcopy document.

Problem: Buying activities/users complain that the error messages from the system do not explain the error message or action needed to remove it. The user must request help from the AMIS monitor or AMIS office to resolve some problems.

Recommendation: All AMIS error messages should provide an explanation and corrective action to the users for resolving these problems.

Problem: Buyers/PCOs could use information stored in the AMIS data bases if it was made available to them. For example, what is the next unassigned ACRN for a contract?

Recommendation: Analysis be performed to see if the IDI software package could contain or retrieve some of the following information from the tables stored in the data bases.

- a. Procurement Identification Numbers PIIN and SPIINs
- b. Appendix N Codes and Addresses
- c. DODAAD and H4/H8 Codes
- d. Contract Line Item Numbers
- e. Accounting Classification Reference Numbers
- f. Modification Code Key (Kind of Modification Code)

<u>Problem:</u> SPO Directors of buying activities have complained that the AMIS reports are not accurate and do not contain all the contractual information they want to know.

Recommendation: The user activities should be surveyed to see what in-house programs are needed and if AMIS could provide the required reports. Data Central is currently providing the following reports to the buying offices:

- a. Actions in Progress
- b. Total Contract
- c. Active Contracts
- d. Total Contract
- e. Physical Complete/Overage Contracts
- f. Summary of Undefinitized Documents
- g. Actions in Progress Management Reports

Problem: At times, AMIS is not accessable in the beginning of the day because end-of-day processing was not completed the previous night. When this occurs, AFCMD payment function is given priority over buying activity work.

Recommendation: Analysis be completed to determine how best to resolve this problem. Some improvement could be made to accommodate buying activities' priorities.

#### 3. Systems Analysis

The problems related to the inputs, processing and outputs are:

#### a. Inputs

<u>Problem:</u> Users complain that the CMCT requires the user to align the forms in the typewriter perfectly.

Recommendation: IDI be implemented as quickly as possible, and word processors be made available to replace the CMCTs.

In addition, provide like features/capabilities to all users.

#### b. Processing

Problem: The processing of batch jobs on the ITEL hardware (computer) requires the mounting of the correct tape or disc by a computer operator. When an incorrect tape or disc is mounted, the job will abort off the machine and this will require the job to be rerun.

Recommendation: Analysis of operator error be completed.

Problem: The End-of-Day (EOD) processing for AFCMD reports takes a tremendous amount of computer time. Improvement in EOD processing appears to take a long time, in some cases, over a year. The critical path has been reviewed several times and some changes have been made to improve the EOD processing.

Recommendation: Analysis be completed to see if a speedup in the throughput of data (I/O) can be improved. Dumping data into the data bases from EOD processing being done in parallel rather than serially would save some processing time.

Problem: The ASD/AD Computer Center ITEL system that processes the AMIS data has a limited number of channels for processing output data. This can be part of the reason the input/output (I/O) is bound up when there are heavy user requests.

Recommendation: Analysis be performed to see if more channels/discs could improve I/O functions.

#### c. Data Base

AMIS data base, or set of data bases, provides an outstanding source of information. However, there are problems that need immediate attention:

Problem: AMIS data bases are incomplete and to some extent incorrect.

This leads to lack of credibility and confidence in the system.

Recommendation: Give top priority to resolving data base problems. To be more specific, the following problems with data bases are identified:

Problem: Are all the data bases really need to complete the AMIS mission?

As new capability was needed, new data bases were added to AMIS.

Many of these data bases did not have the necessary analysis performed to see how efficient they could be made, degree of access for I/O operation and query use:

Recommendation: Analysis of the data base be made to see if the critical path is as efficient as it could be and if the number of data bases could be reduced. In addition, the I/O should be addressed; possible more discs are needed to improve I/O capabilities.

Problem: Many abstractors at AFCMD insert data in the system that is incorrect or incomplete.

Recommendation: The AFSC Regulation 70-13 should contain specific instructions for when a contract could be abstracted into the data base.

The above regulation should clearly state that any contract mailed around distribution should be returned to the Distribution Center for inserting the data into the AMIS. AFCMD should use AMIS to generate the error message thereby notifying the user of any errors or problems when abstracting data into the AMIS.

Problem: The data in the AMISDCAS data base is not complete and contains erroneous information. Many users have complained that administrative contract information from DCAS is not getting into the AMISDCAS data base.

#### d. Outputs

<u>Problem</u>: Queries are difficult to use, inflexible and work only in some of the data bases. Many users do not want to learn programming or make up natural language strings.

Recommendation: Analysis be performed to reduce the number but increase the flexibility of the queries. Users should be asked what types of queries are needed to do their job.

Problem: AMIS users complain that their request for strings/queries take too long to implement by the AMIS SPO. Some changes take up to a year to do. Coordination among the people in the AMIS office takes too long.

Recommendation: Workord data base is an automated version on how the AMIS office will complete a change or create a new string. In most cases, the coordination cycle takes far too long.

Getting things done by committee and requiring several coordinations is the wrong approach.

Problem: Many of the queries in the AMIS do not work. In an attempt to secure data the user will request the AMIS office to provide a natural language string to secure the contractual information from the data bases they need.

Recommendation: The queries should be reviewed and an analysis be performed on the buying activities to determine what strings they might need, then consolidate these findings to provide a flexible type string for the users. A COBOL program should be written so the strings/queries will work in the three data bases (CONTRACT, AMISDCAS and OTHRCONT).

#### 4. Systems Support

#### a. Training and Orientation

A considerable effort has been expended in conducting training activities. However, these efforts are insufficient and lack the required follow-up.

<u>Problem</u>: Lack of formal structure of training programs with emphasis on user's benefits at different organizational levels.

#### Recommendations:

- Develop a training package for top management, with emphasis on AMIS overview and management information needs for decision making.
- 2. Develop working level seminar/workshops; hands-on programs for:
  - a. AFPROS
  - b. BUYACs
  - c. Monitors
  - d. Program Control Personnel
  - e. Budget Analysts (Comptroller)
  - f. Production Specialists
  - q. Contract Reviewers

Problem: Training programs lack a formal schedule for future user requirements.

Recommendation: Offer the above courses periodically with schedules and announcements at least a year in advance. This will allow managers and users to plan their training activities accordingly.

Problem: Training program contents.

Recommendation: Always emphasize user benefits. Toward this end get the users to determine their needs and then, incorporate into the training course.

Problem: Use of outside resources for training.

#### Recommendations:

- Augment AMIS training team with real front line experience systems contracting personnel to give credibility to the training program.
- See to it that AFIT and Defense System Management College include discussions on AMIS in some of their courses.

#### b. AMIS Manuals

A successful system should be clearly documented. At least the following manuals are required:

- (a) A Familiarization Manual
- (b) A Training Manual for each level of user
- (c) A User's Guide or set of guides

Problem: At present, AMIS manuals are too voluminous and its documentation is hard to understand. Potential new users have no manual for AMIS orientation; the available manuals dissuade rather than encourage use of the system.

Recommendation: Prepare a Familiarization Manual as soon as possible.

Distribute the manual to candidates for future users.

<u>Problem:</u> Training manuals are not organized in accordance with the different levels of users.

Recommendation: Prepare different training manuals in accordance with the training needs at different levels of users. Include in the manuals step by step instructions related to the use of hardware equipment for input and output.

Problem: Have a professional agency rewrite the user manuals with the assistance of the previous authors.

#### c. AMIS Monitors

<u>Problem:</u> AMIS monitors lack the training, experience and professional status to be effective. They are AMIS' local representative yet they lack the necessary procurement and AMIS expertise to win their management's commitment to AMIS.

Recommendation: Upgrade the stature of the AMIS monitor by requiring a journeyman buyer or contract administrator to fill the position. The
position should be defined as an ADP procurement analyst requiring full-time monitors at buying activities and large
AFPROs and part-time monitors at smaller AFPROs. The grades
of AMIS monitors must be comparable to the buyers or contract
administrators they are dealing with. Require all monitors
and their alternates to attend formal courses and workshops
in AMIS and S2K. Each large SPO should have a full-time
AMIS focal point to answer routine problems, obtain reports,
and help with natural language queries.

#### d, System Awareness

Problem: There is a lack of awareness among top management and prospective

users with respect to the capabilities of AMIS and the benefits of its utilization.

Recommendations: Promote the utilization of AMIS among top management and prospective users.

- Publish several articles, at different levels of sophistication, in appropriate journals to promote and encourage utilization of the system. For in-house publicity, short articles may be published in <u>Air University Review</u> and <u>AFSC News Review</u>. <u>The National Contract Management Association</u> would be appropriate for dissemination of information to a considerable number of contractors. In addition, technical articles emphasizing the computer capabilities of the system could be published in computer oriented journals such as <u>Info Systems</u>, <u>MIS</u>, <u>Computer Design</u>—etc. This will enhance the image of AMIS among the technical community.
- 2. Publicize new improvements in AMIS among top management and other users. A newsletter describing CMIS-K would be very informative and helpful in attracting more users for the system. Also, publicize the use of IDI in utilizing the CRT technology.

#### IV. FUTURE OF AMIS

A. IS AMIS AN ACQUISITION MANAGEMENT INFORMATION SYSTEM?

The acquisition cycle activities are:

#### Pre-Award

Approval of Requirement
Statement of Work Preparation
Purchase Request Preparation
Approval of Determinations and Findings
Issuance of Requests for Proposal/Solicitation
Commitment of Funds

#### Post-Award

Contract Award and Distribution
Obligation of Funds
Disbursement of Progress Payments
Delivery of Items/Services
Processing of DD250s (Material Inspection & Receiving Report)
Final Payment
Closeout of Contract

- a. AMIS actually covers the activities related to the Post-Award portion of the acquisition cycle.
- b. AMIS covers historical data and it gives information related to current transactions.

#### Conclusion:

AMIS, at the present is an Information Retrieval System for Post-Award Contract information.

#### B. AMIS - INFORMATION RETRIEVAL SYSTEM

AMIS should clearly define its system baseline. Determine the goal of AMIS, Is AMIS a straight retrieval system or

Is it a management information system?

If AMIS decides to concentrate on pre-award information retrieval, it should concentrate on the following activities:

- 1 Correcting and completing the data bases.
- 2 Improving documentation.
- 3 Improving training courses by tailoring the contents to audience comprehension.
- 4 Identifying BUYAC products.
- 5 Prioritizing IDI task to speed up incorporation of CRTs/word processors across the BUYACs.
- 6 This will help in reducing dependence on the antiquated magnetic card typewriters.

- 7 Improving the turnaround time on document validations by finding alternatives to the end-of-day processing, and finally,
- 8 Advertise and encourage prospective users to utilize the system with a clear understanding of what the system can do for them; its capabilities and limitations.

#### C. AMIS MANAGEMENT INFORMATION SYSTEM

- 1 Cons: AMIS drawbacks as a management information system:
  - a. AMIS data base was designed for information retrieval system, therefore it is inflexible for general use as a management information system.
  - b. From the BUYAC point of view, AMIS is not a viable MIS. It does not contain key pre-award milestones/data which the BUYACs require to manage on a daily basis. BUYACs rely on local MIS (LAMIS, Data Central, etc.) for pre-award information because they emphasize what BUYACs need to know to manage on a day-to-day basis.
  - c. AMIS could not serve as a MIS for the Comptroller because it does not contain the total financial program.
- 2 Pros: The following are indicators which encourage the development of MIS:
  - a. AMIS data base, or set of data bases, provides an outstanding source of information. If properly designed, it can be used for a MIS.
  - b. AFSC achieved success in developing CMIS-K using some AMIS data bases.
  - c. AMIS is an expensive system; a lot of money has been invested to develop the system. ITEL AS-5 has been fully dedicated to the system. It makes sense to take advantage of these capabilities in expanding the present system into a viable management information system.
  - d. AMIS has potential as a MIS for AFCMD and eventually AFLC.
  - e. AMIS has the potential for providing a MIS for financial managers.

#### Conclusion:

If AMIS decides to be a viable management information system, it should concentrate on the following activities:

- 1 Future plans should be focused on the pre-award activities and their integration with AMIS in order to develop a "total" system for contract acquisition. At the present time, there are several pre-award subsystems ranging from manual to fairly automated systems. An effort should be directed to standardizing this process towards an integrated system.
- 2 AMIS/SPO should concentrate on being a central program management rather than central development. In this capacity it should coordinate the standardization of data definition to ensure data compatibility among the different systems.
- 3 AMIS, at its present form, is a straight retrieval system. In order to upgrade it to a management information system, some decision support models should be developed and added to the system. The present AMIS data base is very rich with information that could be utilized for decision making by different management levels.
- 4 Some divisions may prefer to develop their own decentralized management support systems. This trend is understandable due to the different styles of management and the continued reduction in hardware cost. This trend is also justifiable due to the fact that the acquisition process is not sufficiently standardized to satisfy all users. Again AMIS/SPO should coordinate efforts toward standardization and compatibility among systems. In other words, concentrate on the standards and policies required to assure smooth transfer of data between the different activities.

5 - Emphasize the role of AMIS as a service organization with a major function of coordinating inter and intra-AFSC acquisition information requirements.

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