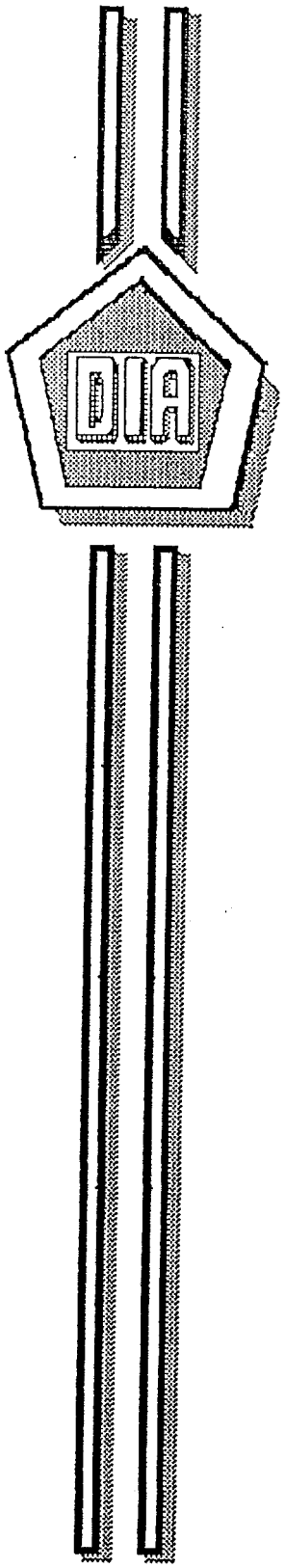
SECRET

DT-S-1008-S



DEFENSE
INTELLIGENCE
AGENCY

ADP SYSTEM REQUIREMENTS (U)

Initial Report

20 December, 1990

NOFORN

SECRET

S E C R E T

ADP SYSTEM REQUIREMENTS (U)
INITIAL REPORT

Date of Publication
15 December, 1990

This is a Department of Defense Intelligence Document
prepared by the Technology Assessment and Support Office,
Directorate for Scientific and Technical Intelligence
Defense Intelligence Agency

SG1J PREPARED BY [redacted]
for Technology Assessment and Support Office (DT-S)

NOT RELEASABLE TO FOREIGN NATIONALS

CLASS BY: DIA/DT
DECLASS: OADR

S E C R E T

[redacted]

ADP SYSTEM REQUIREMENTS (U)
INITIAL REPORT

TABLE OF CONTENTS

[redacted]

[redacted]

EXECUTIVE SUMMARY

1. (U) This report presents the results of a preliminary analysis of the project's ADP needs, a recommended method of system acquisition, preliminary schedule/cost estimate, and supporting analytical data.

2. (C) Based on the preliminary analysis, it is estimated that approximately $80,000.00 to $116,000.00 would be needed to acquire the hardware/software necessary to meet the program's ADP needs. Some of the major items identified are:

a. New computers (80386-based systems to meet increased needs). The current system (80286-based) cannot efficiently support the large databases anticipated, nor will they be compatible with anticipated contractor's systems.

b. Text and graphic digitizers for data input.

c. SYBASE or comparable database software package.

d. Standard software (word processing, spreadsheet, etc.).

e. Research input devices (biofeedback, EEG, etc.)

f. Laser printer(s) for professional output.

g. Projection monitor for presentation.

h. Telecommunications hardware/software.,

3. (U) Since the program facilities are physically separated from the main DIA technical facilities, most of the acquisition effort will have to be performed by program personnel. At present, there is only one program member who has the requisite computer skills (a background in systems analysis and design) to manage the acquisition process. The estimates in this report are based on the Computer Operations Manager dedicating an estimated 40% of his time to the effort.

4. (U) Based on this limitation it will require approximately 12 months to achieve system Initial Operating Capability. This estimate could be reduced by up to 6 months, if additional qualified personnel were assigned to assist in the development activity.

5. (U) Due to this long lead time, it is requested that management review/approval of the proposed approach be granted as soon as possible.

[redacted]

[redacted]

ADP SYSTEM REQUIREMENTS (U)
INITIAL REPORT

I. (U) PURPOSE:

(U) The purpose of this initial report is to delineate the steps necessary for the development/upgrading of the unit's ADP system to adequately meet present and future needs. More detailed aspects of each portion of development will be issued in follow-on reports.

II. (U) SCOPE:

(U) This report presents an analysis and PERT chart of the work that must be performed in order to acquire an ADP system to meet this project's administrative, training, R&D, and database management needs, with special attention to the management of the Foreign Intelligence database and other topic-specific databases.

III. (U) THE SINGLE MOST IMPORTANT ACTION:

(U) The most important aspect of procuring/upgrading an ADP system is planning. Millions of government dollars have been wasted on new equipment which, after payment and delivery, is not compatible with the old system, does not meet the users' real needs, or is so "user unfriendly" as to actually hinder efficient office operation. The only preventive measure for this is proper planning.

(U) For example, many, if not most, computer systems are bought because a computer vendor demonstrates impressive capabilities, or because the office wants to buy the "most powerful" system for the amount of money allocated in the budget. The most common result is that the system users have to change their work habits to meet the new system's shortcomings and idiosyncracies. They often learn too late that although the system may be good for engineering applications, it is terrible at word processing or database searches, which may constitute the bulk of the computer's real work load.

(U) The proper way to plan a system is to learn first what you need, not what a vendor has to sell. Once you know what you need, then find a vendor whose products can meet those needs. The user should not have to meet the system's needs; the system should meet the user's needs.

(U) These considerations take on even greater significance for this program. Since it is physically separated from the main DIA technical

[redacted]

facilities, we do not have easy access to maintenance or technical support. Such factors as maintainability, reliability, compatibility and supportability, as well as the ability to function in a "stand-alone" environment, must be given adequate attention up front in the planning process, not only in terms of hardware/software, but also with respect to program personnel qualified to operate/maintain/modify the system to meet changing program requirements. At least one member of this project needs to be a qualified Computer Operations Manager.

IV. (U) EVENTS AND AN ESTIMATE OF THE TIME REQUIRED:

(U) Proper planning proceeds in a set pattern of specific steps. The elimination of any of these steps, taking steps in the wrong order, or taking shortcuts could spell disaster for the new system. The time estimates shown reflect one person working part-time on the task.

A. (U) TASK A: Establish the system's OUTPUT requirements: (Survey of the unit's needs). Figure 1 shows a list of the output requirements at the time of the last system analysis for this office (1985). An update of these requirements should take approximately 4-6 weeks.

B. (U) TASK B: Establish the system's INPUT requirements (Survey what is necessary to meet the unit's needs). This must include all equipment, training, software, new work routines, etc. necessary for allowing the data to get into the computer. Figure 2 lists just the manhours necessary for keyboard entry, as of the last system analysis (1985) This survey should not be started until the output requirements are completely understood. It should take approximately 3-4 weeks after the completion and approval of Task A.

C. (U) TASK C: Determine operating and security requirements: Such factors as operating environment, security regulations, etc. impact directly on purchase considerations. If other personnel are available, this step can be accomplished in the same timeframe as Task B. If not, it will require an additional 3-4 weeks after the completion of Task B.

D. (U) TASK D: Determine the system's THROUGHPUT requirements: In other words, determine how much the system will have to handle at any one time, as well as overall. This constitutes the system's working parameters, and is "must know" information at purchase time. Figure 3 shows this information as of the last system analysis (1985). Estimated time for determination and report: 2 weeks after the approval of Tasks B and C.

E. (U) TASK E. Determine other office impacts: How will meeting the present needs affect future needs? Only by determining what the probable future needs will be can you make certain that the system is capable of growing along with the unit, and will not become insufficient to the unit's needs within the foreseeable future. Figure 4 is a list of only the filing requirements necessary for the system as of the last analysis (1985). This step should be a constant consideration during all of the above surveys, but should be addressed separately after completion of Task D, and should generate a report of its own. Estimated time for completion: 2 weeks after the completion of Tasks A-D.

F. (U) TASK F. Conduct a market survey the possible hardware/software available: In other words, "shop around". This step is most important, and shortcuts should not be taken. It is time-consuming to talk to vendors, wait for information and pricing, etc. For this reason, an estimated 3-4 weeks should be allotted for this step.

NOTE: Maintenance requirements and repair costs must be considered in this step as well as initial costs.

G. (U) TASK G. Establish and document the final budget aspects. This step can be performed at any time, but the above findings may call for a final reconsideration and adjustment of the allotted amounts. If amounts need to be renegotiated, this step can take 1-8 weeks.

H. (U) TASK H. Delineate contractual requirements and demands: This step should be performed early in the process, as it may impact drastically on all future decisions. Estimated time: 2 weeks, performed at the same time as other steps.

I. (U) TASK I. Order new hard- and software: Time estimated for writing purchase requests, purchase orders, etc. is 2-3 weeks.

J. (U) TASK J. Decide which data and documents are to be transferred to the new system: This task is performed by management, and can be performed at any time.

K. (U) TASK K. Delivery and installation: Time requirements for this step depend on the vendor, the paper-trail system, and a multitude of unforeseeable factors. An estimated time frame is 4-8 weeks.

L. (U) TASK L. Installation and checkout of the system: This includes thorough testing of the system, using office data and documents. During this time the Computer Operations Manager gains a thorough knowledge of the system and the software, in order to train/help others.

Initial testing should take approximately 1 week.

M. (U) TASK M. Transfer and conversion of data and documents from the old system to the new/ Acquisition of data and loading of databases to provide an initial operating capability: Estimated time of transfer for our office: 0 - 3 weeks. NOTE: This time estimate can vary greatly according to the compatibility of the new software with the old.

N. (U) TASK N. Personnel training: Initial training of personnel prior to first usage of the system should require 1-2 weeks, according to the software purchased. However, there is a period of up to 3 months afterwards while the users are still below maximum proficiency. During this time, the System Administrator is called on quite frequently to spend time working out problems with individual users.

V. (U) PERT CHART

(U) The following PERT chart shows the necessary scheduling for tasks A-N.

PROJECT: ADP DEVELOPEMENT PLAN

ADP DEVELOPEMENT PLAN	Da	Who	1991 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Establish Sys Output Req	0	X	----------	.	.	.	.	.	.	.	.	.	.	.
Establish Sys Input Req	0	X	.	.-------	.	.	.	.	.	.	.	.	.	.
Determine Throughput Req	0	X	.	.	. ----	.	.	.	.	.	.	.	.	.
Determine Ops/Security Req	0	X	.	.	. ----	.	.	.	.	.	.	.	.	.
Determine Office Impacts	0	X	.	.	.	---- .	.	.	.	.	.	.	.	.
Establish Budget	0	X	----------				.	.	.	.	.	.	.	.
Market Survey (H/W-S/W)	0	X	.	.	.	.	-------	.	.	.	.	.	.	.
Determine Contract Req	0	X	.	.	.	.	-------	.	.	.	.	.	.	.
Order H/W-S/W	0	X	.	.	.	.	.	------	.	.	.	.	.	.
Deliver/Install/Training	0	X	.	.	.	.	.	.	----------			.	.	.
Data Acq/DB Construction	0	X	----------											.
Initial Operating Capability	0	X	.	.	.	.	.	.	.	.	.	.	.-	.

VI. (U) PRELIMINARY HARDWARE/SOFTWARE ESTIMATES:

Although no exact costs can be given until the completion of Task F, a rough estimate of system costs can be projected at this time. Wherever applicable, 2 years of maintenance costs have been figured into the estimated cost.

80386-based system (10 terminals)	$ 71,900.00
Laser printers (2)	16,000.00
Graphics digitizer	3,000.00
Optical character reader (OCR)	1,000.00
Software	7,000.00
Local Area Network (may not be needed)	25,000.00
Modem (may not be needed)	200.00
Specialized research equipment	
Biofeedback apparatus	500.00
Synergizer	500.00
EEG	800.00
Random Number Generator	100.00
TOTAL ESTIMATED COSTS	$116,000.00

APPENDIX 1:
MAJOR CONSIDERATIONS FOR EACH STEP

(U) Each step requires specific considerations. Some considerations already delineated by the date of this publication are:

A. (U) First, establish the system's OUTPUT requirements: Some important considerations are:

1. (U) Printed material requirements: Printed matter in the form of reports, database summaries, etc. makes up the bulk of an office's computer usage. It is the most visible and long-lasting output the system will make. It is therefore the most important Output consideration. Report types, quantity and quality of print, single vs. multiple sheet printing, etc. must be considered in order to build a system which will meet the unit's needs. Figure 1 contains a listing of the printed output requirements this office had when the last systems analysis was performed. A more up-to-date listing will accompany a more detailed report. There are three basic forms of printers:

a. (U) "Daisy wheel" (also called "letter quality, even though all three types can produce letter-quality print"). This printer has a rotating wheel which strikes the paper, leaving an impression of the letters. It is slow, loud, has very little flexibility for specialized purposes. It does not have any graphics capability.

b. (U) "Dot Matrix" (including "ink jet"). This printer has a "print head", containing small pins which strike out in the required patterns to print text or graphics. It is more compact, less noisy, and very flexible for specialized purposes. In fast mode, the letters and graphics are made of coarse dots. In slow mode, the dots can barely be seen, but the slow mode is very time-consuming, and usually keeps the user from any other activity on the computer while printing takes place. Printed output, especially graphics, is usually of less quality than desired.

c. (U) "Laser". This printer uses a laser to form an image on a xerox drum which is then transferred to the paper. It is fast, quiet, does text and graphics with extremely professional looking results. However, it will not do carbon copies,

2. (U) Graphics output requirements:

a. (U) With the modern trend toward presentation in graphic format rather than as printed text, graphics requirements are a major concern. Figure 1 includes the graphics requirements, since almost all graphics are printed before being changed to other presentation formats.

b. (U) Another form of graphics output is that of the projection-type computer monitor. This adds both color and motion impact to presentations and to computerized training. There are two basic forms of projection equipment for this purpose:

1) The Overhead Projector Slide Screen: This is a monochrome monitor which is the same shape and size of an overhead projector slide. It hooks to a nearby computer, and forms an image exactly the same as that on the computer screen. When this is laid on a standard overhead projector, the screen image is cast onto the wall or projection screen, just like any standard overhead projector slide. This allows the presentation to be controlled by the computer operator. The cost of this type of monitor is approximately $400, and is limited to monochrome displays.

2) A dedicated projection monitor. This type monitor has a standard color monitor with a lens in front of it which projects the computer image onto the wall or a projection screen. The cost is in the $800 range, more or less, depending on quality, projection distance, color quality, etc. Like the other type, this does not require a dedicated computer, but simply hooks to a standard machine for projected output.

3. (U) Database presentation requirements

a. Will output be merged into other output or stand alone?

b. Will data output require accompanying graphics?

c. Will database software be compatible with other software being used on the system?

d. What other equipment is necessary for output?

1) Printer or plotter

2) Modem (for tele-output) - does this need to be a secure line with crypto?

3) Projection screen terminal (for briefings)

4) Color vs. monochrome

B. (U) Second, establish the system's INPUT requirements: Having established the OUTPUT requirements shows the planner what INPUT hard- and software is needed. For example, if maps are to be included in presentation graphics as part of the output, maps will need to be INPUT. There is only certain equipment which can digitize maps and put them into the computer, and the planner is automatically pointed to the need for such equipment.

Beyond the obvious input requirements, however, there are other considerations:

1. (U) How labor intensive is the input? Is there equipment on the market which will be cost effective, due simply to a savings in man-hours saved?

2. (U) How user friendly is system? No matter what the system costs, it costs too much if the user will not use it.

3. (U) What other equipment is necessary for input? The basic system rarely ever has everything you need for any work which is more advanced that just text or data input. For the program's purposes, the following input devices need to be evaluated:

a. (U) Graphics digitizer: This input device is much like a xerox machine, but instead of a copy of the original, will digitize pictures, sketches, artwork, etc. into a format which can be incorporated into word processing documents, briefing slides, etc. This is a graphics only device.

b. (U) Optical Character Reader: This input device is also like a xerox machine, but will read a document and input the text into word processing documents. This is a text only device.

c. (U) Modem: This input/output device connects the system, through phone lines, to other computer systems, databases, etc. It allows the system to draw off data and information from other sources, send documents to other sources, etc. Secure modems may or may not also require:

1) A Crypto device for encipherment of the data, documents, etc.

2) A secure telephone line for transmission.

d. (U) Special input devices specific to the program's

mission: Such input devices are bought separately from the normal equipment we would buy for its regular mission. However, this requirement on the program's computer system means that, when those other pieces of equipment are bought, they will have digital outputs which can be read by the computer (they usually do not have). Such specialized devices include, but are not limited to:

1) Galvanic Skin Response (GSR) device: This bottom-of-the-line device measures the minor variations in the skin's resistance to an electrical microcurrent. Such variations indicate the worker's mental and emotional state at any given time. The machine, therefore, works as a monitoring device. If such a machine were used, it should have a port for output of the results in digital form.

2) Biofeedback: Much like the GSR, a biofeedback machine allows the monitoring of the worker's mental and emotional states, through the monitoring of brainwave activity. This device has the added ability to give the worker audible feedback. Therefore, when the worker's mental state is less than desirable, he/she will know, and can immediately work to bring themselves back into optimum working order. Again, such a machine can only provide an input to the statistical databases if there is a port for the information in digital form.

3) EEG: An electroencephalograph (EEG) machine has never been used for this office, but the need for one has long been recognized. It is a more sensitive machine than the biofeedback machine, and can keep track of much more data. It does not provide feedback, unless used with the hemisync device, mentioned in the next item, below. For such use, a digital port is required.

4) Hemisync: This device uses tones to help attain working states in a much shorter time, as well as to help train new personnel in attaining these ideal working states. The standard machine of this type merely produces tones. However, with digital input/output, the hemisync machine can work in conjunction with the EEG and the computer. The computer, while recording the statistics involved in the work period, can use the information coming from the EEG to control the tonal output of the hemisync machine, to produce the optimum session working-state parameters. This EEG-hemisync combination is the optimum setup presently available for the program's location and exclusive use.

5) Magnetoencephalograph: This device is exponentially more accurate than the EEG and can be used in much the same way as the EEG-hemisync combination. The cost, however, is totally prohibitive, requiring special cryogenic devices, a special facility,

etc. There is no justification for having such a machine for the program's own private use. There is a proposal that workers might go to a place where one of these machines is located, strictly for research purposes. If so, plans should be made to secure special tapes or disks which contain the digital results, for use in the program's statistical studies.

C. (U) Determine special operating and security requirements: One set of special requirements is addressed in Appendix 2 (Foreign Intelligence Database). Other major considerations are:

1. (U) Personnel required for:

a. System management

b. Software maintenance

c. Database administration

d. Software installation/checkout

e. Identification of new software/hardware needs as office growth increases.

f. Recovery of lost/damaged files/data.

2. (U) Programming languages for special operating needs: Can off-the-shelf software suffice for all the office's needs? If not, there are three options for specialized software:

a. (U) Contract for the special software needed. This option is usually a non-option, due to its expense (up to $50,000/program) in both time and money. It also impacts on security, since an outside contractor has to be read onto any secure information which will be manipulated by his program.

b. (U) Request special programming from DIA. This option is costly in respect to time. If the program is very complex, it may still be contracted out.

c. (U) Include a programming language in with the software ($40 - $100), and have or train already cleared in-house personnel to use it. This is the preferred and most time and money effective method. At present, the program has only one person who is fully qualified to program specific needs. Good planning, however, might

include a requirement in the Personnel Selection criteria to insure that at least one new incoming personnel has programming ability.

3. (U) Should workstations be interconnected? (Stand-alone vs. LAN or mini-computer). There are too many pros and cons for each decision to be addressed in a document of this size. The determination makes minor differences in system capabilities, but makes huge differences in terms of system costs and flexibility. A major consideration, however, would be whether or not everyone on the program needs on-line access to the databases. This, of course, is a management issue.

4. (U) Does the program need a Tempest system? In light of the program's current facility and anticipated database classification level, security requirements must be studied in detail. Tempest-secure systems have no more capabilities than regular systems, and normally have little impact on the user. The costs of such a system, however, are sometimes doubled or tripled. When judging this aspect of system needs, one must take into account the facility in which the system is located, and all other security aspects. One obvious method of cutting the cost is to determine whether or not Tempest approval is needed on all terminals, or whether one or two dedicated Tempest terminals will suffice. Also, some means of controlling the perimeter around the program's facilities might be feasible to meet this requirement.

SG1A

[redacted]

6. (U) Will the system need data transmission capabilities? This consideration impacts directly on all decisions about input, output, and security.

7. (U) Will additional training be required

a. Because the system imposes new security risks? (Specifically, in this case, how will the handling of SI/TK Codeword material impact operations?)

b. For the System Administrator?

c. For the users?

8. (U) How will in-house research impact on the needs of the

system? Several pieces of equipment will be bought in other purchases for in-house research, such as EEG machines, biofeedback, Random Number Generators, etc. In designing the system, it must be remembered that these machines will probably have digital ports to feed data directly into the computer, and/or for direct computer control. This stage of planning must take into account that INPUT and OUTPUT ports will be needed to access these machines.

D. (U) Determine maintenance requirements and repair costs: It is often true that maintenance winds up costing more than the equipment, itself. Major considerations in this area are:

1. (U) Will DIA's present maintenance contract cover new equipment?

2. (U) Will some of the equipment come with its own warranties, alleviating the need for immediate service contracts and/or saving on contractual costs for maintenance?

E. (U) Determine other office impact: Several of the specific projects which are to be performed will impact the office environment in the form of work schedules, deadlines, etc.

F. (U) Determine future growth needs and uses: A system which is designed to meet present needs only will tend to be obsolete the day it is installed. If the machine actually does do its job of allowing the office to become more productive and meet present needs in a shorter time, its very presence in the office will cause growth. If it cannot meet this growth, the fault is that of the planner. This stage of the planning is perhaps the most nebulous. No one can accurately predict what future needs will arise. However, the planner must try to logically look at the office's goals, personnel, and must consider ALL future plans the office is making (not just those related to the system), to be certain the system will meet future needs.

G. (U) Once a complete understanding of the needed system is achieved, conduct a market survey of hardware/software meeting the requirements. The major considerations which must be addressed include, but are not limited to:

1. (U) Software/hardware compatibility.

2. (U) Software/user compatibility.

3. (U) CAN THE FILES FROM THE OLD SYSTEM BE CONVERTED TO THE

NEW SYSTEM? If not, old documents and databases will have to be either retyped, or will be lost to computer usage. This is unacceptable. This aspect is usually ignored when lining up purchase plans, and almost always results in a disastrous situation for the office.

H. (U) Make a survey of vendors, purchase resources, prices, etc.

1. Is it necessary to go through DIA-established channels? If so, what are they, and what information/actions are required on the program's part?

2. Can the program go directly to a contractor?

3. How much off-the-shelf hard/software can be used? Will it save money to do so?

I. (U) Delineate contractual requirements

1. (U) Is DIA approval needed for hard/software?

2. (U) Who handles the contracts?

3. Matching funding to costs. How is overall money distribution affected if one thing cannot be purchased or if maintenance costs for one thing mean that something else has to be given up? Is the overall picture considered for EVERY change made?

J. (U) The actual mechanics of replacing the present system

1. Are the users briefed and prepared for the inconveniences facing them?

2. Which is the best installation method: all at once or in "builds" (gradual integration)? Each has its own time demands on the users.

3. Software installation on new system requires a period of "check-out" before the users are proficient. How long will this take?

4. Transfer and/or conversion of data and document files, loading of databases, rewriting of program macros, etc.

5. (U) Training/Re-training of users

Next 5 Page(s) In Document Exempt

APPENDIX 3:
EXAMPLES OF SURVEY RESULTS (U)

The examples in this appendix are taken from the last system analysis, performed in 1985 on the Wang computer system which the program used at that time. Some of the items will not apply to the present situation, and some items which apply to the present situation will not be found in these examples. The purpose of this section is simply to allow the reader to better understand the level of detail which must be considered (but is often ignored) in ADP system acquisition and to indicate the minimum requirements that the proposed system will have to meet.

[redacted]

EXAMPLE 1: (U) MONTHLY DOCUMENT OUTPUT REQUIREMENTS
(Example report from 1985 System analysis - not current information)

TYPE OF DOCUMENT	#/mo.		pgs/doc		pages/mo
Access Roster database	01	X	10	=	010 pages/mo
Briefing texts	02	X	20	=	040 pages/mo
Charts/diagrams	40	X	01	=	040 pages/mo
Cmd Operating Budget	01	X	02	=	002 pages/mo
Concept papers	01	X	20	=	020 pages/mo
Contract negotiations	01	X	50	=	050 pages/mo
Contract evaluations	01	X	15	=	015 pages/mo
Cover letters	20	X	01	=	020 pages/mo
Daily Training Summ.	20	X	04	=	080 pages/mo
Data manipulation*	02	X	03	=	006 pages/mo
Decision papers	14	X	07	=	098 pages/mo
Disposition forms	12	X	02	=	024 pages/mo
Fact sheets	03	X	08	=	024 pages/mo
File backup record	04	X	02	=	008 pages/mo
Files deleted report	01	X	02	=	002 pages/mo
Historical report	01	X	10	=	010 pages/mo
Impact statements	01	X	08	=	008 pages/mo
Information papers	03	X	12	=	036 pages/mo
Inter-office corr.	80	X	03	=	240 pages/mo
Justification papers	01	X	08	=	008 pages/mo
Memos for record	18	X	02	=	036 pages/mo
Mileage report	01	X	01	=	001 page /mo
Monthly Training Rpt.	1	X	20	=	020 pages/mo
Operations rqmnts. pkg.	05	X	02	=	010 pages/mo
Outside correspondence	15	X	02	=	030 pages/mo
Personnel evaluations	03	X	02	=	012 pages/mo
Proj. Ofc. hist. rpt.	06	X	02	=	012 pages/mo
Project Officer Reports	05	X	10	=	050 pages/mo
Project summaries	05	X	05	=	025 pages/mo
Session results package	05	X	04	=	020 pages/mo
Session reports	60	X	04	=	240 pages/mo
Staff studies	02	X	20	=	040 pages/mo
Stage essays	01	X	05	=	005 pages/mo
Talking papers	02	X	12	=	024 pages/mo
Technical summaries	10	X	25	=	250 pages/mo
Training database	20	X	01	=	020 pages/mo
Travel reimbursement	02	X	01	=	002 pages/mo
Travel reports	02	X	05	=	010 pages/mo
Utility assessments	01	X	09	=	009 pages/mo
VuGraph slides	05	X	01	=	005 pages/mo
Misc. other	25	X	01	=	025 pages/mo
TOTAL PRINTED OUTPUT/MONTH					= 1387 pages/mo

[redacted]

EXAMPLE 2: MANHOURS REQUIRED FOR KEYBOARD INPUT
(Example report from 1985 System analysis - not current information)

ITEM	#/mo.		Hrs/doc		Hrs/mo
Monthly Training Rpt.	01	X	14	=	014 hrs/mo
Daily Training Summ.	20	X	03	=	060 hrs/mo
File backup record	04	X	01	=	004 hrs/mo
Files deleted report	01	X	02	=	002 hrs/mo
Operations rqmnts. pkg.	05	X	01	=	005 hrs/mo
Session transcripts	60	X	05	=	300 hrs/mo
Session reports	60	X	02	=	120 hrs/mo
Session results package	05	X	05	=	025 hrs/mo
Training database	20	X	01	=	020 hrs/mo
Technical summaries	01	X	05	=	005 hrs/mo
Inter-office corr.	80	X	02	=	160 hrs/mo
Proj. Ofc. rpts	05	X	04	=	020 hrs/mo
Stage essays	01	X	04	=	004 hrs/mo
Travel reports	02	X	02	=	004 hrs/mo
Briefing texts	02	X	08	=	016 hrs/mo
Charts/diagrams	20	X	01	=	020 hrs/mo
Mileage report	01	X	01	=	001 hr /mo
Physical training rpt	01	X	01	=	001 hr /mo
Contract negotiations	01	X	50	=	050 hrs/mo
Contract evaluations	01	X	20	=	020 hrs/mo
Decision papers	14	X	12	=	168 hrs/mo
Fact sheets	03	X	03	=	009 hrs/mo
Information papers	02	X	12	=	024 hrs/mo
Historical report	01	X	05	=	005 hrs/mo
Proj. Ofc. hist. rpt.	06	X	02	=	012 hrs/mo
Personnel evaluations	03	X	03	=	009 hrs/mo
Incls/indorsmts/etc	20	X	01	=	020 hrs/mo
Significant Events log	01	X	03	=	003 hrs/mo
Staff studies	02	X	20	=	040 hrs/mo
Concept papers	01	X	20	=	020 hrs/mo
Utility assessments	01	X	02	=	002 hrs/mo
Justification papers	01	X	06	=	006 hrs/mo
Project summaries	05	X	05	=	025 hrs/mo
Memos for record	18	X	01	=	018 hrs/mo
Outside correspondence	15	X	02	=	030 hrs/mo
Talking papers	02	X	07	=	014 hrs/mo
Investigation summary	05	X	03	=	015 hrs/mo
Cmd Operating Budget	01	X	03	=	006 hrs/mo
Impact statements	01	X	05	=	005 hrs/mo
Data manipulation*	02	X	03	=	006 hrs/mo
Misc. other	25	X	01	=	025 hrs/mo
TOTAL MANHOURS REQUIRED				=	1303 hrs/mo

EXAMPLE 3: ADP MEMORY REQUIREMENTS
(Example report from 1985 System analysis - not current information)

Date of survey: October 28, 1985

Application	# of users	# of files	# of sectors	Memory req.
Documents	23	1,229	39,933	10,222,848 bytes
CP/M programs	6	11	10,703	2,739,968 bytes
BASIC programs	14	106	7,811	1,999,616 bytes
Indices	31	54	5,880	1,505,280 bytes
OIS data files	7	23	3,935	1,007,360 bytes
Glossaries	8	34	1,356	347,136 bytes
Message in-basket	1	1	553	141,568 bytes
GLOBAL objects	7	27	477	122,112 bytes
BASIC data files	13	16	427	109,312 bytes
BASIC indexed files	1	1	14	3,584 bytes
BASIC indexed keys	1	1	13	3,328 bytes
TOTALS	31	1,503	71,102	18,202,112 bytes

EXAMPLE 4: FILING AND HISTORICAL REQUIREMENTS
(Example report from 1985 System analysis - not current information)

ITEM	File?	Length of time
Monthly Training Rpt.	Y	05 years
Daily Training Summ.	Y	05 years
File backup record	Y	.5 year
Files deleted report	Y	02 years
Operations rqmnts. pkg.	Y	10 years
Session transcripts	Y	10 years
Session reports	Y	10 years
Session results package	Y	10 years
Training database	N	N/A
Access Roster database	N	05 years
Technical summaries	Y	10 years
Inter-office corr.	Y	02 years
Proj. Ofc. rpts.	Y	10 years
Stage essays	Y	02 years
Travel reports	Y	10 years
Travel reimbursement	Y	10 years
Briefing texts	Y	02 years
Charts/diagrams	Y	as needed
Mileage report	Y	01 year
Physical training rpt	Y	01 year
Contract negotiations	Y	10 years
Contract evaluations	Y	10 years
Fact sheets	Y	02 years
Decision papers	Y	10 years
Information papers	Y	02 years
Historical report	Y	10 years
Personnel evaluations	Y	10 years
Significant Events log	Y	10 years
Staff studies	Y	10 years
Concept papers	Y	10 years
Utility assessments	Y	10 years
Justification papers	Y	10 years
Cover letters	Y	as needed
Project summaries	Y	02 years
Memos for record	Y	as needed
Outside correspondence	Y	as needed
Talking papers	Y	as needed
Investigation summary	Y	10 years
Cmd Operating Budget	Y	10 years
Proj. Ofc. historical	Y	10 years
Impact statements	Y	10 years
Misc. other	Y	as needed