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OIT-0373-86

8 MAY 1986

MEMORANDUM FOR: Chief, Information Management Staff, DO

FROM:

[Redacted]

Acting Director of Information Technology, DA

SUBJECT:

Proposal to Expand the Current APARS System

REFERENCE:

Your Memo to D/OIT, dtd 7 Apr 86, Same Subject
(DO/IMS 86-156)

An APARS Working Group has been established to consider
the proposal presented in the referenced memorandum. [Redacted]

[Redacted] Chief of the Communications Network Planning Branch,
Systems Planning and Evaluation Division, Engineering Services
Group, OIT, has been assigned as the action officer on this
project. He has been in contact with [Redacted] of your
staff. [Redacted] can be reached on secure extension [Redacted]

[Redacted]

[Redacted]

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25X1 OIT/ESG/SPED (5 May 86)

Distribution:

- Original - Addressee
- 1 - AD/OIT Chrono
- 1 - SPED/ESG Chrono
- 2 - OIT Registry

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Date 4/9

<u>Action</u>	<u>Info</u>	<u>Seen</u>
D	✓	<i>[initials]</i>
DD		
DD-M		
DD-O	✓	<i>[initials]</i>
Nancy		
Mimi		
Yolanda		
SA/D&E		
A&TPS		
C/NBPO		
C/IISG		
C/NSG		
C/NSEG		
C/MISG		
C/GOG		
C/ESG	✓	
C/DFG		
C/M&CG		
C/AS		
HRP		
Destroy		

COMMENT:

Action ESG

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(Consult)

*- a proposal exists)
Does it conform to the right?
DO funding ?!*

So Bill O.

ML

DO/IMS 86-156

7 APR 1986

MEMORANDUM FOR: Director of Information Technology, DA

FROM: [redacted]
Chief, Information Management Staff, DO

SUBJECT: Proposal to Expand the Current APARS System

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1. The remote APARS system is processing a volume that is approaching its capacity. The IMS/Automated Registries Section reports that there has been a 35% increase in cable volume processed by the APARS remote sites since August 1984, and the volume is expected to continue to increase at a rate of 15% per year. The registries are currently experiencing difficulties in processing this heavy traffic load.

2. I recently learned that an IMS APARS registry will be required in the new building in late 1987 to support the DO components which will be relocated there (PPS, AF and SE Divisions). Additional increases in traffic will result as DO components move into the headquarters building from outlying areas, to include [redacted] and the DO components which will be returning [redacted]. These additional requirements, along with the the projected increases in traffic volume, suggest the need for procuring additional remote APARS units within the next twelve months.

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3. In view of the above, I propose the following:

- that two complete APARS remote systems be purchased; one for installation in the new building, and a second for installation in one of the existing APARS sites; and,
- that an APARS working group, consisting of appropriate OIT and IMS personnel, be established to consider this proposal and, if appropriate, to enter into negotiations with Xerox to provide the additional equipment by early 1987.

4. Attached herewith are two internal IMS memoranda containing additional information in support of this proposal.

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[redacted]

Attachments: a/s

C O N F I D E N T I A L

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[redacted]

C O N F I D E N T I A L

26 February 1986

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MEMORANDUM FOR:

[Redacted]

Chief, Information Management Staff

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VIA:

[Redacted]

Chief, Operations Group

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FROM:

[Redacted]

Chief, Information Control and
Reference Branch

SUBJECT:

Recommendation to Support Acquisition of
ETHERNET

1. For the past several years the four IMS remote APARS systems have experienced difficulties due to the slow transmittal of traffic to them from Main APARS. The data transmission rate (4800 baud) is too slow and is able to average only 250 messages per hour to each remote. On three occasions during February the Combined Staffs Automated Registry (CSAR) processed over 5000 messages in one day. At the present data transmission rate it takes 20 hours to send 5000 messages to CSAR. Based on the projected increase in cable traffic volume in 1986, we will soon exceed the ability of the system to transmit all of the traffic to the remotes in a 24 hour period and the DO will experience unacceptable delays.

2. The Office of Information Technology has recommended a replacement system called ETHERNET which would increase the transmission rate 6 to 10 fold according to test results from Xerox. However, OIT personnel we have spoken to have indicated that OIT is unable to identify funds for this essential enhancement. Our projections on the ability of APARS to carry us beyond 1986 to 1990 are based on the assumption that we will have ETHERNET. Without ETHERNET, ARS will not be able to provide an acceptable level of service to the customers.

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[Redacted]

C O N F I D E N T I A L

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3. We request that you discuss this matter with Chief, OIT as soon as possible and impress upon him the importance of ETHERNET to the effective functioning of the remote APARS units.

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C O N F I D E N T I A L

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4 March 1986

MEMORANDUM FOR: The Record

FROM:

SUBJECT: Background Paper on the APARS System

APARS

The Automated Printing and Reproduction System (APARS) was placed on line in 1982. Since installation the system has been under constant pressure to handle a traffic volume that exceeded the systems capabilities. The cable volume is increasing at the rate of 15% per year and it appears that the ALLSTAR system will not be able to ease the pressure before 1990. The following paper is intended as a study on the current capacity followed by recommendations on how the system could be augmented to provide adequate coverage in the future. I will project, as best I can, the future of APARS over the next five years, exploring the impact of such things as cable volume growth, possible system re-configurations, and staffing.

BACKGROUND

When APARS was originally designed, the estimated processing capacity of the system was 7,000 messages per day. The four remote systems were installed in the latter part of 1982 after considerable system design changes, but it quickly became obvious that the system, as installed, was not adequate to meet the needs of the Directorate of Operations throughout the estimated system life expectancy (through 1987). In March 1984 new software was installed in the four remotes resulting in a dramatic increase in system capacity, throughput, and life expectancy. The system is currently processing over 11,000 messages per day, OIT/HFD has reported numerous days in January that the volume has exceeded 14,000 messages, which is about the maximum amount that the system can accommodate.

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CONFIDENTIALSTAFFING

Currently, each site is operated by four full time employees and one part time employee. In addition, two full time employees comprise an evening shift which operates until midnight Monday through Friday. Due to the lack of positions and personnel the two man evening shift moves from site to site depending on the work volumes. Note: When the section accepted the responsibility of providing an evening shift it was with the understanding that the section's TO would be increased by three positions. The positions were approved by Chief IMS and then eliminated during a slot reduction exercise. Experience has shown this staffing level to be barely adequate under the best of circumstances, and inadequate for proper coverage during absences for leave or training. We see ARS approaching a crisis situation in personnel staffing with an inability to properly serve the DO customer. Additional systems will not be effective unless sufficient manpower is identified for ARS. The section averages 300 hours of overtime each month.

The total staffing for all four APARS sites should be increased to 24 to meet current needs, and gradually increased to meet projected volume increases in 1987. Sufficient positions should be identified for the night shift that will provide one employee for each site with the fifth acting as a supervisor. The evening shift, if properly staffed, could provide more efficient utilization of the current hardware. On a daily basis employees are moved to cover for absence and we have also had to cancel training courses. A 24 hour operation would provide additional machine printing time, but has not in the past been very effective. I suggest that we augment the system with appropriate hardware and plan on operating on an 18 hour work schedule. In order to maintain the current level of service to the Divisions and Staffs, those sites must be staffed at a level which will permit leave and training.

I recommend that the section personnel staffing level be brought up to a minimum staffing level of 39 by 1987 (7 over our present T/O of 32).

25X1 The recommended staffing levels for the years involved are: 1986 (39) five positions for the evening shift and two additional positions for the CCS registry [redacted] 1987 (50) five positions for 24 hour coverage and six positions for a registry in new building, 1988 (50), 1989 (50), 1990 (50), and 1990 (50). After 1987 the staffing needs could very easily be affected by a change in focus of the APARS missions and the needs and requirements of the offices they serve as addressed in greater detail below.

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Under this premise, we will have to rely on the user to eventually recognize the benefits of electrical dissemination and ask for the reduction or elimination of printed cables. Based on our observations in various offices in the DO, we do not expect a new cadre of younger, less rigid officers who are willing to give up paper to be in positions of authority before 1990, and printed cable traffic will be required until then and beyond. According to the timetable for the ALLSTAR Upgrade, most of the DO will not have operational terminals until 1989-90. This takes us into the 1990's before we see any real reduction in printed cables. By 1990 we expect cable volume to be almost double that of 1985, making expansion of APARS a necessity.

POTENTIAL OF PRESENT SYSTEM

APARS is now operating at about 75% of its capacity. (This includes 5% for planned and un-planned downtime.) It is processing 11,000 messages (or 100,000 sheets of paper) per day in the four sites. The Office of Communications estimates cable traffic volume growth at 13% to 15% per year. Comparing Jan-Feb 1985 to Jan-Feb 1986 there was 17% and 20% growth. There has been a 35% increase in cable volume processed by the remotes since August 1984. We will use 15% in our projections and also provide a potential increase of 25% in the event of a crisis situation. Based on these figures, the remote APARS sites will be operating at 100% capacity sometime in 1986. They will be processing 12,800 messages per day, using 31,900 sheets of paper per remote or 127,600 sheets per day total.

Again, using an estimated growth rate of 15% per year, the following figures approximate our expectations by 1990: (The figures shown are PER DAY.)

Year	Messages		Sheets per Four Remotes	
1985	10,000	(12,000)	100,000	(125,000)
1986	11,500	(13,500)	115,000	(144,000)
1987	13,200	(15,500)	132,200	(165,000)
1988	15,200	(18,000)	152,000	(200,000)
1989	17,400	(20,000)	174,800	(218,500)
1990	20,000	(24,000)	200,000	(250,000)

Numbers in parens represents 25% surges.

	20%				
86	12,000	87	14,400	88	17,280
89	20,700				
90	24,800				

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With the anticipated completion in 1987 of the new Headquarters building, the Directorate of Operations components now in other buildings are expected to move back to Headquarters. A new remote site has been suggested for the new building to serve the components that will be relocated. (PPS, AF and SE) This will increase the number of users being served by APARS, and dictate the need for additional APARS sites. Other alternatives which may serve the same end, such as enlarging two of the present systems, all call for a six printer configuration by 1987. ARS management believes that adding a second printer in 3C34 and a complete system in the new building will enable us to handle the increased traffic volume most cost effectively.

Our projections on the needs and capabilities of APARS are based on the assumption that we will have ETHERNET, a fast data transfer system. The present data transfer rate from the Main to the Remotes is inadequate (250 messages per hour) and this new message handling system is scheduled to be installed in the Fall of 1986. ETHERNET may double, or even triple, the present transfer rate. It is essential that ETHERNET be installed in the next year or the system will not be able to accommodate the expected increases. A six printer configuration without ETHERNET would be of little help when faced with the projected increase in traffic volume.

In August 1985, OIT/HFD installed phase one of the new Message Handling Facility (MHF). This allowed CDS to perform as it was designed to and to process cable traffic more rapidly. As additional phases of MHF are installed and MHF eventually replaces CDS, we should see the smooth and rapid flow of cable traffic through the entire system and the elimination of bottlenecks. Here again, this will be true only if we have ETHERNET.

Alternatively, IMS could establish a policy which would eliminate printed copies of certain categories of cable traffic within a specified time after installation of an office's terminals. Due to the small number of customers scheduled to have terminals before 1989, this would not eliminate the need to expand APARS. However, it may bring earlier recognition of the benefits of electrical dissemination as opposed to printed cables, and allow earlier reduction of the manpower requirements in the APARS registries.

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The following are options that appear to be available at this time, with the advantages and disadvantages as I perceive them. It should be noted that thus far OC/OIT has borne all APARS expenses.

INSIST ON THE INSTALLATION OF ETHERNET IN 1986

Most significant solution to APARS problems

EXPAND THE SYSTEM BY PURCHASING TWO COMPLETE ADDITIONAL SYSTEMS

New building and LA/FR/AF sites, cost
\$1,500,000

THE STAFFING LEVEL OF ARS SHOULD BE INCREASED

Additional slots/personnel for evening shift

Additional printers would provide capacities to handle increases and surges caused by crisis situations.

	printer (1)	(4)	(6)
sheets per hr	2,000	8,000	12,000
sheets per 12 hrs	24,000	96,000	144,000
sheets per 18 hrs	36,000	144,000	216,000
sheets per 24 hrs	48,000	192,000	288,000

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23 April 1986

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MEMORANDUM FOR: FROM:

SUBJECT: DO APARS Requirement, Status Report

Members of ESG, GOG and the Directorate of Operations (DO) met to discuss the DO requirement for additional Remote APARS systems. Before a requirement for additional remote units can be implemented, funding for the proposed upgrade of the existing Main APARS must be identified. This proposed upgrade is basically the replacement of PDP equipment with VAX equipment and the installation of ETHERNET to increase the capability of the system-to-system links. There is an existing contract with XSYS (Xerox) for a previously planned upgrade to APARS. This contract has been redirected to encompass the VAX equipment and ETHERNET proposal for an additional \$465K. DO has identified the money in FY85 funds. We are waiting for the Office of Logistics to make a decision (through OGC) on the legality of using FY85 funds for this project. GOG is trying to get this decision today. If the decision is not forthcoming, I suggest that pressure be placed upon OL to force a decision. If the decision is "no", we will have to go forward with an unfunded requirement. Until the source of the funding is determined, we cannot proceed on the requirement.

The possibility of using the PBX instead of ETHERNET to support the interconnectivity of APARS is still being investigated. If it proves viable, the cost of the project will be approximately \$140K less.

The DO asked if OIT had provided funding for additional APARS equipment in the new building. It was explained that additional equipment is being installed in the new building to accommodate the needs of the main output centers but no money has been identified to provide equipment for remote DO registries. The DO will have to identify funds for their requirement. It was also suggested that the DO split their requirement into two parts spanning FY86 and FY87. One remote printer in each of the two years, \$600K each year.

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