NEWS

INFONET

THE INFORMATION NETWORK DIVISION OF

COMPUTER SCIENCES CORPORATION

Volume 1 Number 2
September 1973

ANNOUNCEMENT

NATIONAL TELEPROCESSING NETWORK USERS GROUP MEETING

The next meeting of the INFONET National Teleprocessing Network users group will present and discuss user problems and requirements in order to solidify and present them to GSA and CSC in the most definitive manner. Discussion will also take place on how to make the users group more effective as well as future participation by CSC in technical presentations and seminars. Other agenda items include:

- A report on the status of the user group
- A discussion of means for improving notification of meetings
- A discussion of methods to broaden geographic representation

The meeting of the users group will take place on September 27, 1973, at 9:30 A.M. in Room 1604, General Services Administration, Region 3 Headquarters, 7th and D Streets, S.W., Wash., D.C.

Users wishing to include other items on the agenda should immediately mail their suggestions to Don MacKillican, the temporary chairman, at the following address:

G. Don MacKillican, AMS-340
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

FINANCIAL NOTES

The Interagency Subcommittee on the National Teleprocessing Services Contract met on August 22, 1973, to review a report of actual contract utilization during F/Y 1973 and make projections for contract utilization during F/Y 1974.

The following items were discussed and procedures established.

M00082-2

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USER DISCOUNTS

The subcommittee established the following discounts for users of the contract:

25% for July and August 1973
32% for September 1973
33% for October through December 1973

These discounts apply to charges for use of network services (systems resource usage, private device usage, conversational and bulk terminal connect time, bulk terminal I/O, on-line permanent storage, and magnetic tape rental). The discounts do not apply to charges for non-network services (consulting, training, and documentation, etc.).

INVOICING PROCEDURES

During F/Y 1973, invoices and invoice supplements for individual accounts contained gross charges only and did not reflect user discounts. Discounts were reflected only on the Government-wide summary invoice paid by GSA, together with the reporting charges ($3.00 per USERID and PROJID) and prior period credits. GSA subsequently apportioned the discounts, reporting charges, and prior period credits to individual accounts when preparing GSA Form 2090, Report of Data Processing Services for Other Government Agencies, used in billing the individual accounts. Thus the billing package sent by GSA to other agency users consisted of a Standard Form 1080 or 1081, Transfer Voucher, GSA Form 2090, two copies of the CSC invoice and supplements, and one copy of the CSC session register.

Beginning with the July 1973 billing cycle, invoices and invoice supplements for individual accounts reflect the discounts, reporting charges, prior period credits, and the net amount to be paid to GSA. This eliminates the need for preparing a GSA Form 2090 for each individual account; hence, that document is no longer included in the billing package.

ON-LINE BUDGETARY CONTROL SYSTEM

During Fiscal 1973, NTSC on-line budgetary control was maintained on the basis of gross charges and amounts reflected in purchase orders. Because actual charges were considerably less than gross charges, budgetary limits were established in a somewhat arbitrary manner.

As of July 1, 1973, budgetary control is maintained on the basis of net charges after the application of the GSA/user discount rate. In this way, budgetary limits are based on the actual amounts reflected in purchase orders.

NETWORK CHANGES

COMMUNICATIONS AND CONFIGURATION

A third National UNIVAC 1108 on-line computer, System E, was installed in the Los Angeles Center in July, marking the completion of a carefully-phased integration schedule. During this time, Remote Communications Concentrators (RCCs) were upgraded throughout the network to interface with the new system and to provide extended system capacity and reliability.

New interface modules were installed to link existing RCCs with Systems A, B, and E in San Francisco, Dallas, Chicago, Washington, D.C., and New York. An additional RCC was installed in Denver in July and another in Silver Spring in August. Future plans call for the installation of another RCC in Oakbrook to provide increase high-speed communication for the Chicago area.

Since System E became operational, a fourth core box has been installed. Additionally, tape drives for Systems A and B have been increased from eight to ten.

To increase the reliability of the communications network, associate technical support engineers (ATSEs) were hired, trained, and located in Seattle, Dallas, and Boston to help analyze user problems and to interface with TSEs in the computer centers. In addition, the working hours for each center were lengthened to allow support personnel to troubleshoot any communication problems before daily on-line operations begin.

By upgrading the Dallas RCC to interface with Systems A, B, and E, it is now possible for Fort Worth area FX lines to support any low-speed terminal between the ranges of 10 and 30 cps. By September 24, the Seattle RCC will also be split to interface with Systems A, B, C, and E; as a result, Auburn will be able to access these systems.

Equipment is currently on order for completion of a multiplexer link to provide increased low-speed communication from Huntsville. (FX service will still be available for high-speed terminals.) This link should be operational by the middle of October.

Since June, high-speed communications on the INFONET Network have increased by approximately 20%. (An additional FTS high-speed line and data set was installed in the National Center for the sole purpose of testing high-speed port performance.) Since June, total low-speed port capacity has been increased by 40%, with FTS low-speed service presently being installed in Denver.

NETWORK ACCESS

A summary of current access telephone numbers is found in Table A.

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Table A. Telephone Access Numbers
Systems A, B, E

Location	Low Speed	High Speed
BOSTON		
A, B, E	617-969-2602 (TTY) 617-965-2225 (2741) 617-965-2010 (30 cps)	617-542-4155
NEW YORK		
A, B, E	914-592-5190	914-592-8974
WASHINGTON		
A, B, E	301-585-6520	301-585-7080
A, B	301-585-7046	301-587-3081
E	301-585-7900	301-585-6311
ATLANTA		
A, B, E		404-523-7041
A, B	404-325-3250 (TTY) 404-325-3261 (2741) 404-325-3266 (30 cps)	
E	404-325-9225 (TTY) 404-325-9771 (2741) 404-325-9507 (30 cps)	
HUNTSVILLE		
A, B, E	205-534-2487 (TTY) 205-539-9378 (30 cps) 205-536-9651 (2741)	205-539-7981
E	205-534-2042	
CHICAGO		
A, B, E	312-325-7212	312-325-9700
ST. LOUIS		
A, B, E	314-231-7605 (TTY) 314-231-6560 (2741) 314-231-7930 (30 cps)	314-436-3493

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Table A. Telephone Access Numbers (Continued)

Location	Low Speed	High Speed
KANSAS CITY		
A, B, E	816-756-1344 (TTY) 816-756-0820 (2741) 816-756-0172 (30 cps)	816-361-5217
DENVER		
A, B, E	303-893-3808	303-892-9220
FT. WORTH		
A, B, E	214-263-5731	
AUBURN		
A, B, E	206-833-6133 (10 cps only through 9/23 — 10-30 cps thereafter)	
SAN FRANCISCO		
A, B, E	415-391-9080	415-989-7060
SEATTLE		
A, B, E (thru 9/23)	206-624-2367 (TTY) 206-624-0896 (2741) 206-624-3594 (30 cps)	
A, B, E (beginning 9/24)	206-624-3580 (B only thru 9/23)	206-624-8724
LOS ANGELES		
A, B, E	213-772-6971	213-772-4365
DALLAS		
A, B, E	214-638-7850	214-630-1610

NEW SYSTEM RELEASE

OPERATING SYSTEM RELEASE 8.10

In conjunction with the continuing policy of enhancing the power of the INFONET Teleprocessing Network, a new system release is scheduled for installation in all INFONET centers. Tentative operational dates are as follows:

Center	Date
C	October 19
A, B, E	November 2
J, Q	November 16

Contact your INFONET representative for the date of installation at the center(s) you are using.

Following is a summary containing a synopsis of key features of the release. For specific details, users are encouraged to read the Network Release Manual "CSTS Operating System 8.10", Vol. 1, Sec. 0006, No. UC-1-0006, dated September 14, 1973.

GENERAL

1. Sign-on characters have been reassigned such that many types of terminals are supported by a smaller number of sign-on characters.

2. Trailing blank characters on lines of a file are not stripped on punched paper tape output.

3. Users of bulk terminals may change TIDs without redialing.

GPS

1. The DROP command doesn't cause a list on OUT$ of files dropped unless explicitly requested by the LIST option.

2. The DROP option of the EQUATE command eliminates all file name equivalences.

3. The HOLD option of the FORM command synchronizes output to conversational OUT$ with execution of programs.

4. Messages invoked by the INQUIRE command to report the status of batch jobs have been revised.

BASIC

1. Output from the INQUIRE command, and results of the INQ function have been revised.

2. Interlocks on records of a file are improved.

COBOL

1. Source lines input to COBOL may be up to 144 bytes long.

2. COBOL I/O subroutines generate standard keys unless the ACTUAL KEY clause is specified.

FORTRAN I/O

1. The MLTFIL service subroutine may be used to read and write multiple files on a single foreign tape volume.

2. The MAXREC service subroutine may be used to read and write records larger than one page (512 words).

DML (RELEASE 2.6)

1. Processing improvement modifications have been made.

2. Many processor errors have been removed.

NEW APPLICATION PACKAGES

GPSSTS

The GPSSTS application program, which was announced in the last Newsletter, is the INFONET version of GPSS (General Purpose Simulation System). While the language syntax and functional characteristics of GPSSTS are nearly identical to those of GPSS/360, signifi-cant improvements have been incorporated which enhance the simulation language. Transfer of models developed under GPSS/360, however, is straightforward. Development of new GPSS models can be performed easily with rapid turnaround, using the interactive capability of CSTS.

GPSSTS is used in the study of a wide variety of practical situations, including manufactur-ing process control, vehicular flow patterns, air traffic control, message-switching systems, and the monitoring of complex interdepartmental activities.

Output from GPSSTS, automatically saved in the user's library, can be used as input to any analysis program.

A summary of the major GPSSTS features includes:

1. <u>On-Line Checkout Facility</u>

   GPSSTS enables a user to monitor the model throughout its execution. For instance, he can interrupt execution, display the model statistics accumulated at the time of interruption, and resume execution or abort the run if an error is detected in the information displayed at the keyboard terminal.

2. An Extended-HELP Block

The user-supplied HELP block subroutines can be coded in FORTRAN. Through an array of 2000 fullword save-values, the user has total communication with the model. He can display and reset the save-values, perform complex arithmetic functions in FORTRAN, and enjoy full access to the Standard FORTRAN library. Thus, evaluating trigonometric functions, exponential functions (continuous, not tabulated), and other mathematical functions, is a simple task for a GPSSTS model.

3. Dynamic Core Allocation

By employing dynamic core allocation, GPSSTS ensures that only the minimum amount of space required by the program is ever used. A significant result of dynamic core allocation is the removal of most limitations on the number of entities that may be used in a model.

4. Large Model-Building Capability

To maintain efficiency during model execution, four entities in GPSSTS are assigned limits:

Transactions	2000
Logic Switches	1000
Samevalue (full word)	2000
Samevalue (half word)	2000

The REALLOCATE card enables the user to alter the above limit, if desired. A common pool of 53,000 words is made available to all entities on a first-come-first-allocate basis.

5. Free-Form Input

Unlike GPSS/360, which is card-column oriented, GPSSTS accepts free-form input. Also, the block label has been expanded to six characters which increase flexibility in the assignment of meaningful labels.

SPSS

SPSS (Statistical Package for the Social Sciences) will soon be made available to network users. This well-known, well-documented, integrated system of programs provides data analysts with a comprehensive set of procedures for data transformation and file manipulation and for most of the statistical routines commonly used in the social sciences. Targeted for release at the beginning of calendar year 1974, the package is currently being converted to run on CSTS.

SPSS contains many parametric and nonparametric statistical procedures, which can be broadly classified into the following categories:

1. One-way frequency distributions, measures of central tendency and dispersion
2. Table displays of relationships between two or more variables
3. Bivariate correlation analysis

4. Analysis of variance
5. Multivariate correlation and regression
6. Guttman scaling and factor analysis

These statistical procedures are easily accomplished through the use of simple commands, all of which are explained in a highly readable manner in the SPSS Manual published by McGraw-Hill. Output of the results from the system is provided automatically with English language titles and subtitles.

The key feature of SPSS is a data management subsystem, which simplifies the user's task when entering data, handling and recoding missing data, transforming and creating variables, sampling and processing data, and retrieving data using Boolean operations.

FILE RECOVERY AND BACKUP PROCEDURES

Users of the INFONET system are provided the capability for total file protection to guard against losing disc resident files and from the possible problems associated with tape resident files.

TAPE FILES

Because CSTS allows the user to access his tape files easier and quicker, and because they resemble disc files, many users do not employ secondary tapes. It is recommended users write to the primary tape, modify them, and then immediately update a secondary tape for backup purposes. It is not uncommon for users writing to a single tape to find it gets stretched, or it passes a magnetic field, or is dropped, resulting in loss of data because of the lack of backup capability. This form of backup applies to both domestic and foreign tapes.

DISC FILES

For disc files, CSC provides a backup at the end of each operation day by assigning a processor to search the total file system and copy to a special set of system log tapes all new files created that day and all files that were modified. These data are written to tape in such a fashion that they can be recalled on an individual basis on demand. They will remain available for recovery purposes for 60 days. To further extend the automatic backup features, once each week any file with a backup time stamp greater than 28 days is again copied to the log tapes. The user, to further protect himself, can backup every resident file update immediately in either the BASIC or GPS subsystem by simply entering

BACKUP filename

This command provides protection such that even if the user drops his file before it is backed up, the system will not release the space until it has completed the backup procedure. To expedite the recovery procedure if required, the user can precede his BACKUP command by requesting that the date and time be displayed. This information is helpful to CSC operations personnel working on file restoration.

FILE RECOVERY

Many users who have files to recover believe recovery will take place momentarily upon receipt of the message that the recovery process is underway. The recovery process is often time consuming, depending on the system load and the amount of data involved. Normally achieved within two hours, the time can range from a few minutes to more than a day. All recovery tasks are stacked in a single queue where priorities are assigned by the system. Special CSC VI files forced into the recovery mode for any reason receive top priority because the system can not perform in optimum fashion without them. All other files in the queue are considered to be equal to each other and take their place in order of receipt.

SYSTEM RECOVERY AND BACKUP PROCEDURES

The present INFONET backup procedure provides two independent daily backup mechanisms (physical dump and logical dump) and graduated retention cycles as long as six months.

Complete physical dumps of all public mass storage are taken daily. The daily dump, comprising about 150 reels of magnetic tape, is retained for one week. In addition, the dump taken on the first Saturday of each month is retained for six months. Hence, there are typically twelve physical dumps (six daily plus six monthly) or about 1,800 tape reels in the vault at any given time!

Under the logical dump process, discussed above under "Disc Files", there are typically an additional 1,800 reels in the valut at a time.

The dumps described above are stored in a waterproof and fireproof underground vault which is near, but not connected to, the building which houses the El Segundo computer facilities. They are thus physically isolated from any disaster (fire, flood, explosion, etc.) which may affect the computer centers, but are located conveniently enough to permit quick response to requests for file restoration.

CHECKPOINT RESTART CAPABILITY

As a standard practice, users who expect a job to run for an elapsed time of more than 150 minutes or consume more than 2,000 SRUs should build into their programs checkpoint restart capability. This practice will protect the user in case of system failure and allow him to restart the program with a minimum of effort and computer time.

Because of the wide variety of techniques available to create this capability, interested users should consult one or more of the following references:

Chandy, K.M. and C.V. Ramamoorthy. "Rollback and Recovery: Strategies for Computer Programs," IEEE Transactions on Computers, June 1972, p. 546-55.

Crook, B.H., et. al., "Program Re-Run Facilities in Magnetic Tape Systems," Proceedings of the Fourth Australian Computer Conference, Adelaide, So. Australia, 1969, p. 159-165.

Drake, R.W. and J.L. Smith, "Some Techniques for File Recovery," Australian Computer Journal, November 1971, p. 162-170.

Droulette, D.L., "Recovery Through Programming System/360-System/370," AFIPS 1971 Spring Joint Computer Conference, p. 467-476.

Fraser, A.G., "Integrity of a Mass Storage Filing System," Computer Journal, Vol. 12, No. 1, February 1969, p. 1-5.

Gunton, A., "Recovery Procedures for Direct Access Commercial Systems," Computer Journal, May 1970, p. 123-126.

Higgins, A.N., "Error Recovery Through Programming," AFIPS 1968 Fall Joint Computer Conference, Vol. 33, Pt. 1, p. 39-43.

Martin, J., Design of Real-Time Computer Systems. Prentice-Hall, 1967.

Oppenheimer, Co. and K.P. Clancy, "Considerations for Software Protection and Recovery from Hardware Failures in a Multiaccess, Multiprogramming Single Processor System," AFIPS 1968 Fall Joint Computer Conference, Vol. 33, Pt. 1, p. 29-37.

"Restart and Recovery," EDP Analyzer, October 1968, 10 pp.

Yourdon, E., Design of On-Line Computer Systems; Prentice-Hall, Inc. 1972, p. 608.

Yourdon, E., "Reliability of Real-Time Systems Pt. 5: Approaches to Error Recovery," Modern Data, May 1972, p. 38-52.

Yourdon, E., "Reliability of Real-Time Systems Pt. 6: Approaches to Error Recovery," Modern Data, June 1972, p. 38-46.

HOT LINE

One of INFONET's most valuable services to users of the National Teleprocessing Network is the availability of a 24-hour-a-day HOT LINE to provide technical assistance for operating problems.

Whenever a user encounters difficulty in his use of the network, or whenever the system does not provide sufficient information to enable him to interpret a particular problem, the HOT LINE provides the necessary human interface. Manned by technical support personnel in the National Center, who are also involved in maintaining system operation, the HOT LINE provides immediate access to solutions for all operational, programming, applications, hardware, or communications problems.

The FTS HOT LINE number for National Teleprocessing Network users is (213) 536-6223. The local Los Angeles number is (213) 322-7120.

In addition to the HOT LINE services provided by the National Center, Federal Network operations maintains a customer systems representative (CSR) on duty from 8 A.M. to 7 P.M. (Eastern time) in the Rosslyn, Virginia, office. The duty CSRs are available to assist Government users with problems they may encounter in the use of the INFONET system and any of the applications programs. He may be reached by calling (703) 527-6080 and asking for the "Duty CSR".

Users who have access to the FTS network can dial this number direct from some areas; on the other hand, others who do not have a direct dial capability can reach it through the Washington, D.C., FTS switchboard.

KEY PERSONNEL ASSIGNMENTS

The following appointments were recently announced by INFONET president, John. W. Luke.

HUNNICUT

Ted R. Hunnicut has been appointed to the newly created position of Vice President, Finance and Planning. In this capacity, he is responsible for the division's financial, accounting, and administrative functions, as well as pricing, new market analysis, and long-range planning activities.

Prior to joining CSC, Mr. Hunnicut was director of services for Honeywell Information Systems, Western Operations, where he directed and coordinated the finance, administration, revenue, legal, and personnel functions for thirteen Western States. Prior to that, as regional marketing director, he managed the sales and systems support operations. In earlier Honeywell assignments, he coordinated staff functions in the areas of finance, administration, personnel, and business planning for the Information Systems' home office in Boston.

He holds an A.B. degree in economics from the College of William and Mary.

QUICK

G. Wayne Quick was recently promoted to the position of Manager, Regional Network Development, with responsibility for all Federal Government marketing and technical support in all regions except Region 3.

Since joining INFONET in November 1970, Mr. Quick initiated and developed an important new application area (FHA cost system) for the Department of Housing and Urban Development, a major network user. Another significant government application supported by Quick is the Army's automated recruiting system, REQUEST.

Before joining CSC, Mr. Quick held positions as senior marketing representative for U.S. Time Sharing, Inc., and sales assistant for IBM, where he was responsible for conducting training programs in data processing.

He holds a B.A. in foreign affairs from the University of Virginia.

NEW PUBLICATIONS

The following new CSTS publications are now available:

IMAGE (E00200-01)

A description of the IMAGE support program for the FASTLP and UMPIRE applications.

COBOL PROGRAMMERS GUIDE (E00177-01)

Part VII "Debugging a COBOL Program" has been added to the Guide to describe the use of the MONITOR and other COBOL language debugging statements, the use of GPS program checkout commands to debug a COBOL program, and how to read dumps.

Two new appendixes have also been added to support Part VII: a Fieldata Conversion Table and a complete listing of the subroutines contained in the COBOL library.

GPS SUBROUTINES AND FUNCTION REFERENCE (E00184-01)

Two new subroutines have been added, L$KEY and L$UNKEY, for use primarily by COBOL programmers to manipulate standard keys.

Appendix S, PFR Subroutines, a preliminary version of a description of PFR Subroutines, is now available to assembly language programmers only.

The following revised publications are also available:

MISTER (E00192-01)

A major update of the documentation for the Management Information System for Time, Expenses, and Resources (MISTER) application.

DML REFERENCE (E00161-01)

A total revision of the Data Management Language (DML) Reference and User's Guide.

GPSSTS: GENERAL PURPOSE SIMULATION SYSTEM ON CSTS (E00195-01)

Update package for the recently released GPSSTS publication.

ARBC USES NETWORK

The American Revolution Bicentennial Commission, charged with the preparation of an overall program commemorating the bicentennial of the American Revolution, is implementing an information system on the INFONET Teleprocessing Network that will function as a calendar or register of all programs and projects involved in the 1976 observance.

The task will carry out a congressional mandate to provide a central clearing house for information and coordination regarding dates, events, places, documents, artifacts, and personalities of bicentennial historical and commemorative significance.

To accomplish the undertaking, the ARBC developed BINET (Bicentennial Information Network) which uses the INFONET system. Programming for BINET was performed by the General Services Administration using INFONET's data management language (DML).

A large data bank is being constructed in the batch mode with input information provided by potential program sponsors, state bicentennial commissions, private and public organizations, and individual sponsors. Output, available from conversational terminals, will be available to the Commission itself, its staff, state bicentennial commissions, various government agencies at all levels, the travel industry, the news media, and the general public. In addition, bicentennial information will be available in more conventional printed forms, prepared by the BINET staff using the INFONET service.

As presently envisioned, BINET will have three uses.

As the bicentennial is approached, the system will be used largely as a coordinative device through which national, state, and local planning groups can keep duplicate efforts to a minimum while eliminating overlapping activities in terms of participants, performers, audiences, and planning dollars.

With the beginning of the bicentennial, BINET data will be available to all interested parties so that the general public, as well as special interest groups, can be kept informed of all bicentennial activities.

Finally, upon completion of the bicentennial program, BINET will provide a complete archival picture of the entire commemoration, since all information entered about each project will be retained within the program, although the user will receive only the latest updated information.

As presently envisioned, the following would be a typical information withdrawal routine for a Western travel agency using a conversational terminal to access BINET in its check to determine if there is a bicentennial event that might be witnessed by a client planning to visit New Orleans in mid-November, 1976.

(Normal Sign-On)

WHAT TYPE OF INFORMATION DO YOU DESIRE?	(system)
EVENTS.	(agency)

WHAT THEMATIC AREA?

FESTIVAL USA.

WHAT PRESENTATION FORM?

PARADES.

WHAT TIME PERIOD?

10-15-76.

WHAT GEOGRAPHIC LOCATION?

SOUTHERN.

WHICH STATE?

LOUISIANA.

(System prints all parades scheduled and all pertinent information)

DO YOU DESIRE FURTHER INFORMATION?

NO.

(Sign-Off)

BINET was officially inaugurated on July 3, 1973, by Mrs. Anne Armstrong, Counselor to the President, in a ceremony in Washington, D.C. With over 350 projects in the data base to date, BINET is actively seeking additional project information from program sponsors who should contact:

> BINET
> American Revolution Bicentennial Commission
> 736 Jackson Place
> Washington, D.C. 20276
> (202) 254-5180

CSC IN THE NEWS

Since the last issue of INFONET News, CSC has received a number of important government contracts, at both the federal and county levels, including the renewal of our teleprocessing service to GSA users. The major awards are described below.

GSA CONTRACT RENEWAL

The July 1 renewal announcement by GSA extends for another year the contract awarded to INFONET in March 1972. William R. Hoover, chairman and president of CSC, said more than 70 government organizations are currently using the service.

The Commissioner of GSA's Automated Data and Telecommunications Service, M.S. Meeker, explained that "the concept of pooling common data requirements has, in less than one year, saved millions of dollars. We are confident that as agencies utilize INFONET, rather than creating duplicative systems, the savings will multiply tremendously in the months and years ahead."

ORANGE COUNTY SELECTS CSC

At the end of July, Orange County, second most populated county in California and seventh largest in the nation, took the unprecedented step of engaging an outside firm to supply all of its data processing needs. Under a 7-year, $26 million contract, CSC was selected to manage the county's data processing center and develop new computer programs.

CSC's bid was 30% less than the $37.8 million cost projected by the county's internal data processing center over the seven-year period.

NEW NASA CONTRACTS

CSC has received contracts from NASA totalling more than $12 million. A follow-on contract, valued at $6.7 over a three-year period, was awarded by Ames Research Center, Mountain View, Calif., where CSC is providing computer services support to the Simulator Computer System Branch. A second contract, valued at approximately $5 million over a five-year period, calls for engineering and related services to NASA's Wallops Station, Wallops Island, Va. The third award, worth approximately $1.2 million over three years, is for analysis and programming services to Langley Research Center, Hampton, Va.

ARMY SELECTS CSC

The Army's Safeguard System Command, Huntsville, Ala., awarded CSC a contract to assist in upgrading the computer-based Instrumentation Acquisition System at Kwajalein Missile Range. Under the $500,000 contract, CSC will design and develop real-time software for a CDC 7600 computer that will replace a smaller machine. The company will also upgrade and convert all scientific applications developed for the present processor, a CDC 3300.

AIR FORCE CONTRACTS

As a result of two recent contract awards, CSC is now responsible for both the tactical and strategic aspects of the Air Force's modernization of its command and control operations.

Under a digital systems update project, known as 436M and valued at more than $2 million, CSC is integrating several computer programs as part of a major hardware/software update effort for the Strategic Air Command.

An additional $1.4 million award was received this month from the Electronic Systems Division to develop computer programs for the 485L Tactical Air Control Center and many of its subordinate elements.

USER PARTICIPATION INVITED

The INFONET News is designed to be an informative and useful tool to Federal Government users of the National Teleprocessing Network. Your suggestions and contributions are welcome. If you would like to see additional subjects covered, or present material expanded or eliminated, please write or phone directly to:

W.E. Neel, Editor
INFONET News
Computer Sciences Corporation
650 North Sepulveda Boulevard
El Segundo, CA 90245
(213) 678-0311

APPLICATIONS EXCHANGE

Several Government users of the National Teleprocessing Network have benefited directly from applications used by other offices. The INFONET News is a good vehicle to disseminate information about some special use you are making of the Network. As the first step in getting the spotlight focused on your application in a future issue, please complete the following form and mail to:

George R. Fullerton, Project Director
National Teleprocessing Network
Computer Sciences Corporation
1701 North Fort Myer Drive
Arlington, Virginia 22209
(703) 527-6080

Name _____ Telephone Number _____

Organization _____

Location _____

Application _____

Languages _____ Author _____

Brief Description of Problem/Solution _____

_____

_____

_____

_____

Comments_____

_____

(No report of the above will be printed without your prior approval)