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THE DESIGN AND USE OF AN ERROR CORRECTION INFORMATION SYSTEM FOR NASTRAN

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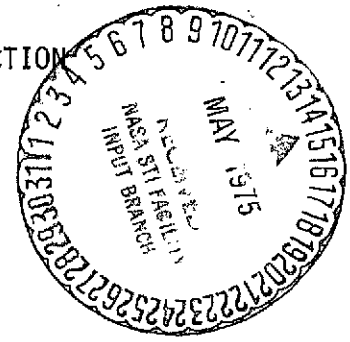

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16. Abstract

Error Correction Information System (ECIS) is a system for a two-way transmittal of NASTRAN maintenance information via a data base stored on a nationwide accessible computer. ECIS consists of two data bases. The first data base is used for comments, reporting NASTRAN Software Problem Reports (SPR's) and bookkeeping information which can be updated by the user or the NASTRAN Office. The second data base is used by the NSMO to store all SPR information and updates. The hardware needed by an accessing user is any desktop computer terminal and a telephone to communicate with the central computer. The instruction format is an engineering oriented language and requires less than an hour to obtain a working knowledge of its functions.

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THE DESIGN AND USE OF AN ERROR CORRECTION INFORMATION SYSTEM FOR NASTRAN

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November, 1974

SUMMARY

A new procedure has been implemented to transmit error information between the NASTRAN Office and users of the NASTRAN Structural Analysis Computer Program. This procedure is called Error Correction Information System (ECIS) and possesses the following desirable qualities:

(1) It is economical
(2) Corrections and updates are simultaneously available to all users
(3) It uses presently available software and hardware
(4) It is easy to use

ECIS consists of two data bases. The first data base is used for comments, reporting NASTRAN Software Problem Reports (SPR's) and bookkeeping information which can be updated by the user or the NASTRAN Office. The second data base is used to store all SPR information and updates. Although the second data base can be updated only by the NASTRAN Systems Management Office users may access and obtain any information from either data base. A software data management system is used to support these data bases. The hardware needed by an accessing user is any desktop computer terminal and telephone to communicate with the central computer.

The instruction format is an engineering oriented language which requires less than an hour of study to obtain a working knowledge of its functions. This report contains a complete description of the data bases finally developed as well as many explanatory examples of their uses.

INTRODUCTION

The Error Correction Information System (ECIS) is a positive step by the NASTRAN Systems Management Office (NSMO) to provide NASTRAN users with information on Software Problem Reports (SPR's) and to transmit information to NSMO on any problems encountered with NASTRAN by the users. The data bank consists of two distinct data bases. The major data base is called ECIS and consists of SPR information. The user can only query this data base and select desired information with respect to any one, many, or all SPR's. The minor data base is called USER COMMENT. This data base is for the user to store his name, organization, date, time and comments before he accesses ECIS. The user can query or write into this data base, and it is used primarily to transfer information between the user and NSMO.

ECIS is presently maintained on Control data's CYBERNET service computer system located in Rockville, Maryland. CYBERNET can be accessed by telephone from any desktop computer terminal by any user with a computer account at this data center. The operating system used is KRONOS which provides a time-sharing environment. The software used for ECIS is a program called SYSTEM 2000 Level 2, a multi-purpose data management system. Anyone interested in a more detailed explanation of SYSTEM 2000 may contact Control Data Corporation for a SYSTEM 2000 user information manual. All pertinent information for ECIS, however, is included in this writeup.

DEFINITION OF ECIS DATA BASE

The data base is completely defined by the following numbered list of components:

```
 1*   SPR NUMBER
 2*   USER NAME
 3*   USER ORGANIZATION
 4*   COMPUTER
 5*   LEVEL FOUND
 6*   LEVEL FIXED
 7*   DATE REPORTED
 8*   OPERATING SYSTEM
 9*   PRIORITY
10*   RIGID FORMAT
11*   R.F. SUBSET
12*   ALTER
13*   ERROR MESSAGE
14*   PREVIOUS REPORTED BUG
15*   MODULE NAME (RG)
  16*   MODULE
17*   SUBROUTINE NAME (RG)
  18*   SUBROUTINE
19*   DOCUMENTATION ERROR (RG)
  20*   DER NUMBER
  21*   MANUAL
  22*   PAGE DATE
  23*   SECTION
  24*   PAGE NUMBER (RG)
   25*    PAGE
26*   STATUS OF SPR (RG)
  27*   WHOM ASSIGNED
  28*   DATE ASSIGNED
  29*   STATUS CODE
  30*   ERROR CODE
  31*   EXPECTED COMPLETION DATE
  32*   STATUS COMMENTS
33*   DESCRIPTION OF ERROR (RG)
  34*   DESCRIBE ERROR
35*   TEMPORARY FIXES (RG)
  36*   DESCRIBE TEMP FIX
37*   PERMANENT FIXES (RG)
  38*   PERM FIX IBM
  39*   PERM FIX CDC
  40*   PERM FIX UNIVAC
```

The method of using these components will be explained herein, and this list should be used for reference.

DESCRIPTION OF ECIS DATA BASE

The ECIS data base contains two types of data. The first is an element, consisting of a name standing for data within the data tables. Each element has a name and a number which are synonymous (see previous page for such a list). If the user wants to print both SPR number and user name for example, he types "PRINT SPR NUMBER, USER NAME" or "PRINT C1, C2."† The second component is the Repeating Group (RG), which allows elements to take on multiple values. For each error entered into the data base, there will be only one SPR NUMBER but there might be several SUBROUTINE data items entered indicating which subroutines need modification to correct the problem. The name used for a Repeating Group is for definition only and cannot take on data values.

GAINING ACCESS TO THE ECIS DATA BASE

To gain access to the KRONOS system on CYBERNET from a time-sharing terminal, the user must perform the following log-on procedures:

1. Turn all components on by pressing the power-on buttons.
2. Dial your CYBERNET telephone number.
3. Insert phone in acoustic coupler.
4. When a connection to the KRONOS system is complete, the following typical message will be printed out and appears on the scope screen:

   74/03/20. 14.39.27. EASTERN CLUSTER CTR. KRONOS 2.1.8
   SYS B USER NUMBER:

In the following statements, the user must type on his terminal keyboard the items that are underlined:

5. Type USER NUMBER CR††
   Insert your user number above. This number is assigned by CYBERNET.

6. System response will be:

   TERMINAL: 55
   RECOVER/SYSTEM

† Referring to the numbers 1* and 2* as seen in the ECIS data base definition on the previous page.

†† CR indicates carriage return.

7. Type -S2KV2 CR

8. System response will be

```
74/03/29. 14.42.19.  *BEGIN SYSTEM 2000* RELEASE 2.30J
?
```

This means you have accessed SYSTEM 2000 properly. The question mark (?) indicates SYSTEM 2000 is ready to receive instructions from the user. No user instructions will be accepted by SYSTEM 2000 until a "?" appears on the scope. The user must wait for a "?" after each entry, and each entry is terminated by a colon (:) and CR.

9. Type USER, NSMO: CR

10. Type ACCOUNT IS S4611KA: CR

11. Type DBN IS USER COMMENT: CR

12. System response will be ASSIGNED USER COMMENT.

13. Type LOAD: CR

14. System response will be 10.48.47. - BEGIN LOADING -

At this time, SYSTEM 2000 is ready for data to be loaded into the USER COMMENT data base. The definition of the data base is shown below:

1. User Name
2. User Organization
3. Date
4. Time of Day
5. User Comments (RG)
   6. Comments
7. NSMO Comments (RG)
   8. NSMO

The data can be loaded into this data base in the following format:

15. Type 1* Your Name * CR
    2* Your Organization * CR
    3* The Date * CR (which must be in 03/21/74 format)
    4* Time of Day * CR (which must be in 2:31 format)
    5*6* Any Comments * CR
    5*6* Any Comments * CR
    5*6* Any Comments * CR
    End**CR

The entry, 5*6*, means this is a repeating group. There can be unlimited entries in a repeating group; however, no single entry can exceed two hundred fifty characters.

16. Type EXIT: CR

17. System response will be END SYSTEM 2000.

18. After a brief pause system response will be READY.

The following six steps are essentially the same as steps 7-12 above:

19. Type -S2KV2 CR

20. System response will be

    74/03/29. 14.42.19 *BEGIN SYSTEM 2000* RELEASE 2.30J

21. Type USER, NSMO: CR

22. Type ACCOUNT IS S4611KA: CR

23. Type SHARED DBN IS ECIS: CR

24. System response will be ASSIGNED ECIS.

You are now ready to query the ECIS data base for error information.

After querying ECIS (see next section), the following sign-off procedure must be used to prevent damage to the data base.

25. Repeat steps 16-18.

26. Type BYE CR

27. System will respond with LOG OFF information.

28. Remove phone from acoustic coupler.

29. Switch all components to power off.

QUERYING ECIS

Querying Ecis is limited only by the knowledge, intuition and requirements of the user. The retrieval commands range from the very simple to the very complex. The retrieval operation commands are in the form of PRINT (Something), or PRINT (Something) WHERE

(Certain Conditions Exist). The quantity and form of the output is controlled entirely by the user through proper definition and ordering used in the retrieval commands. A thorough and comprehensive study of the section "A Typical Terminal Session" is recommended for a clear understanding of data base procedures.

General Forms of Output Statements

1) PRINT (Print Clause):

The print clause is the simplest form used in obtaining output from the data base. The print clause is only a list of data base items the user wants printed. The data can be printed in any order or number by listing in the print clause each data wanted and in the order wanted. The only restriction is that each data must be called by its proper name or element number as shown in the definition of the ECIS data base on page 2. If data from Repeating Groups (RG) are included in the print clause, the name must be preceded with a (, BY ENTRY ,) operator.

Examples: (See Definition of Data Base)

```
PRINT SPR NUMBER:
PRINT SPR NUMBER, USER NAME, SUBROUTINE:
PRINT C2, SPR NUMBER, C3, LEVEL FOUND:
PRINT C1, BY ENTRY, SUBROUTINE:
PRINT C1, C3, C4, C2:
```

2) PRINT (Print Clause) WHERE (Condition Clause):

The condition clause can take many forms, such as AND, OR, EQUAL (EQ), NOT EQUAL (NE), GREATER THAN (GT), LESS THAN (LT), LESS THAN OR EQUAL TO (LE), GREATER THAN OR EQUAL TO (GE), EXISTS, AND FAILS. If data for repeating groups is included in a where clause it must be preceded by an ENTRY HAS operator.

Examples:

```
PRINT SPR NUMBER WHERE SPR NUMBER EQ 395:
PRINT C1 WHERE C7 EXISTS:
PRINT C1 WHERE LEVEL FOUND GE 15.1:
PRINT USER NAME WHERE SPR NUMBER LT 1000
 OR SPR NUMBER GT 200, AND USER NAME NE
 ROSSER, AND USER ORGANIZATION EXISTS:
PRINT C1, BY ENTRY, C34 WHERE C6 FAILS AND
 ENTRY HAS MODULE EQ SDR2:
```

3) There are two special cases which may be needed by some users:

a) PRINT ENTRY:

The PRINT ENTRY command will print out the entire data base. This command will cause excessive printout. If all of this information is desired it is suggested that you purchase the SPR LOG from COSMIC.

b) PRINT ENTRY WHERE (Condition clause):

This command will print the entire entry for any SPR where the condition clause is satisfied. The PRINT ENTRY WHERE command can be used to print one or many entire entries with one command. For instance, if one wanted the entire entries for all SPR's submitted by a particular user, he would type:

PRINT ENTRY WHERE USER NAME EQ WALL, JAMES

Caution

When using ECIS, the user should exercise caution when placing parameters in the WHERE CLAUSE. If too few parameters or parameters with wide ranges are chosen, excessive printout may occur. The user should not interrupt printout even if it is excessive. The prescribed sign-off procedure must be used to avoid damage to the data base.

DEFINITION AND UTILIZATION OF THE USER COMMENT DATA BASE

```
1*      USER NAME
2*      USER ORGANIZATION
3*      DATE
4*      TIME OF DAY
5*      USER COMMENTS (RG)
  6*      COMMENTS
7*      NSMO COMMENTS (RG)
  8*      NSMO
```

The User Comment Data Base has three purposes. The major purpose is for the two-way transmittal of information between NSMO and the user community. Through this data base the user can make comments in general, describe difficulties or submit an SPR. The second purpose is bookkeeping. From this information NSMO can compile facts on when, how often, and by whom ECIS is being accessed. Therefore, it is imperative that each user load into the User Comment Data Base his NAME, ORGANIZATION DATE, AND TIME OF DAY, each time he accesses ECIS. From this information NSMO can respond quickly to any unusual problems

the user may encounter. The third purpose of this data base is for NSMO to respond to users. NSMO will access the User Comment Data Base daily and record the user comments or problems and then update the data base with an acknowledgment, a solution to the problem, or an explanation of what NSMO's plans are with respect to the user's specific problem. Then the user can access the data base and learn that NSMO has received his data and what solutions or alternatives are available to him.

NSMO will also use this data base for general comments for all NASTRAN users. The following is a complete procedure with examples for using the User Comment Data Base.

To gain access to the KRONOS SYSTEM on CYBERNET from a time-sharing terminal, the user must perform the following log-on procedure:

1. Turn all components on by pressing the power-on buttons.
2. Dial your CYBERNET telephone number.
3. Insert phone in acoustic coupler.
4. When a connection to the KRONOS system is complete, the following typical message will be printed out and appears on the scope screen:

   74/03/29. 14.39.27. EASTERN CLUSTER CTR. KRONOS 2.1.8
   SYS B USER NUMBER:

In the following statements, the user must type on his terminal keyboard the items that are underlined:

5. Type User Number: CR

   Insert your user number above. This number is assigned by CYBERNET.

6. System response will be

   TERMINAL: 55
   RECOVER/SYSTEM

7. Type -S2KV2 CR

8. System response will be

   74/03/79. 14.42.19. *BEGIN 2000* RELEASE 2.30J
   ?

This means you have accessed SYSTEM 2000 properly. The question mark (?) indicates SYSTEM 2000 is ready to receive instructions

from the user. No user instructions will be accepted by SYSTEM 2000 until a "?" appears on the scope. The user must wait for a "?" after each entry, and each entry is terminated by a colon (:) and CR.

9. Type USER, NSMO: CR

10. Type ACCOUNT IS S4611KA: CR

11. Type DBN IS USER COMMENT: CR

12. System response will be ASSIGNED USER COMMENT.

13. The user is now ready to access any, part, or all of the data he needs from the User Comment Data Base. The following examples will give the user a guide for querying the User Comment Data Base.

    A. Problem - Find all NSMO comments for a certain date:
    PRINT BY ENTRY, NSMO WHERE DATE EQ 08/20/74: CR

    B. Problem - Find all NSMO comments related to a certain USER NAME on a certain date:
    PRINT ENTRY, C8 WHERE C3 EQ 09/10/74 AND
    USER NAME EQ JIM ROGERS: CR

    C. Problem - Find entire ENTRY for a certain date and USER NAME:
    PRINT ENTRY WHERE C1 EQ JIM ROGERS AND DATE EQ 09/10/74: CR

    D. Problem - Find NSMO's general comments for all users
    PRINT ENTRY WHERE C2 EQ NSMO: CR

14. Type EXIT: CR

15. System response will be END SYSTEM 2000.

16. After a brief pause system response will be READY.

17. Type BYE CR

18. System will respond with LOG OFF information.

19. Remove phone from acoustic coupler.

20. Switch all components to power off.

A TYPICAL TERMINAL SESSION

```
74/04/16. 15.11.49

USER NUMBER:  R6411KP,

TERMINAL:       55
RECOVER/SYSTEM: -S2KV2

74/04/16.  15.12.36. *BEGIN SYSTEM 2000* RELEASE  2.30J

---

? USER, NSMO:

---

? ACCOUNT IS S4611KA:
---
? DBN IS USER COMMENT:
 ASSIGNED USER COMMENT              1         5   74/04/01.  15.30.04.
---
? LOAD:
 15.13.36. -BEGIN LOADING -
? 1*  Rosser, Dave *
? 2* NASA Langley Field *
? 3*  04/16/74 *
? 4*  2:55
? 5*6*  This is a test run on the new ECIS data base *
? 5*6*  This is an example of more than one entry for
          comments *

? End**
 15.20.51. - SCAN COMPLETED
 15.20.52. - DATA SET POINTERS CREATED -
 15.20.52. - DATA SETS UPDATE COMPLETED -
 15.20.52. - BEGIN KEYED VALUE FILE SORT -
 15.20.52. - KEYED VALUE FILE SORT COMPLETED -
 15.20.54. - LOADING COMPLETED -
 - DATA BASE SIZE AFTER LOAD '       87040 CHARACTERS
---
? EXIT :
            END SYSTEM 2000
READY.

-S2KV2
74/05/24.  13.28.06. *BEGIN SYSTEM 2000* RELEASE   2.30K
---
?  USER, NSMO:
---
?  ACCOUNT IS S4611KA:
---
```

```
? DBN IS ECIS:
 ASSIGNED ECIS                          1        1    74/05/13.  15.00.26.
?  PRINT ENTRY WHERE SPR NUMBER EQ 1036:
 1*  1036
 2*  MEI, CHUCK
 3*  NASA-LRC
 4*  CDC 6000
 5*  15.70
 6*  15.70
 7*  02/08/72
 9*  5.0
 10*  1
 11*  3
 12*  A
 13*  3031
 16*  SSG1
 18*  SSG1A
 29*  FIN
 30*  ERROR
 34*  UNABLE TO FIND SELECTED SET IN TABLE (SLT) IN
 34*  SUBROUTINE (SSG1).  LOAD=15 CARD IS IN THE CASE CONTROL DECK.
---
?  EXIT:
          END SYSTEM 2000
READY.
BYE
R6411KP      LOG OFF.  11.23.13.
R6411KP      SS        0.034 SEC.
```

SAMPLE PROBLEMS

1.) Problem:
Print all the information for a particular SPR.

Method 1:
PRINT ENTRY WHERE SPR NUMBER EQ number:

Method 2:
PRINT ENTRY WHERE C1 EQ number:

Sample Problem:

```
PRINT ENTRY WHERE SPR NUMBER EQ 1036;
 1*  1036
 2*  MEI, CHUCK
 3*  NASA-LRC
 4*  CDC 6000
 5*  15.70
 6*  15.70
 7*  02/08/1974
 9*  5.0
 10*  1
 11*  3
```

```
12*  A
13*  3031
16*  SSG1
18*  SSG1A
29*  FIN
30*  ERROR
34*  UNABLE TO FIND SELECTED SET IN TABLE (SLT) IN
34*  SUBROUTINE (SSG1).  LOAD=15 CARD IS IN THE CASE CONTROL DECK.
```

2.) Problem:
Find the SPR NUMBER and PRIORITY for all SPR's submitted by a particular user.

Method 1:
PRINT SPR NUMBER, PRIORITY WHERE USER NAME EQ name:

Method 2:
PRINT C1, PRIORITY WHERE C2 EQ name:

Method 3:
PRINT C1, C9 WHERE C2 EQ name:

Sample Problem:

```
PRINT SPR NUMBER, PRIORITY WHERE USER NAME EQ WEIDMAN, DEENE J.:
 1*  639
 9*  2.5
 1*  828
 9*  4.0
 1*  1039
 9*  2.0
```

3.) Problem:

Find out if a particular error has been reported to NSMO and, if so, does it have a temporary fix.

Method 1:
a) PRINT SPR NUMBER,BY ENTRY, DESCRIBE ERROR WHERE ENTRY HAS MODULE EQ name AND ENTRY HAS SUBROUTINE EQ name:

b) PRINT DESCRIBE TEMP FIX WHERE SPR NUMBER EQ number:

Method 2:
a) PRINT SPR NUMBER, BY ENTRY, C34 WHERE ENTRY HAS MODULE EQ name AND ENTRY HAS C18 EQ name:

b) PRINT C36 WHERE SPR NUMBER EQ number:

Method 3:
a) PRINT C1, BY ENTRY, C34 WHERE ENTRY HAS C16 EQ name AND ENTRY HAS C18 EQ name:

b) PRINT C36 WHERE C1 EQ number:

Sample Problem:

```
PRINT C1, BY ENTRY , C34 WHERE ENTRY HAS C16 EQ TRLG AND ENTRY
HAS C18 EQ TRLGA:
 1*      986
   34*   FOR IDENTICAL BULK DATA, QVECT LOADS ARE APPLIED DURING A
   34*   NON-LINEAR STEADY STATE ANALYSIS, BUT NOT DURING A TRANSIENT
   34*   RUN.
   34*   QVECT CARDS IN HEAT TRANSFER ANALYSIS
  1*      1063
   34*   CANNOT GET STATIC LOAD IN.
PRINT C36 WHERE C1 EQ 986:
   36*   THE TABLE REFERENCE FORM OF THE THERMAL FLUX VECTOR
   36*   MUST BE USED IN TRANSIENT THERMAL ANALYSIS.
```

4.) Problem:
Find certain SPR NUMBERs that have not been fixed for a particular MODULE:

Method 1:
PRINT SPR NUMBER WHERE MODULE EQ name AND LEVEL FIXED FAILS AND SPR NUMBER GT number:

Method 2:
PRINT C1 WHERE MODULE EQ name AND C6 FAILS AND SPR NUMBER GT number:

Method 3:
PRINT C1 WHERE C16 EQ name AND C6 FAILS AND C1 GT number:

Sample Problem:

```
PRINT C1 WHERE MODULE EQ SDR2 AND C6 FAILS AND C1 GT 900:
 1*  928
 1*  933
 1*  966
 1*  1073
 1*  1092
 1*  1118
 1*  1120
```

5.) Problem:
Find certain SPR NUMBERs and MODULEs that have TEMPORARY FIXes, in a particular LEVEL FOUND.

Method 1:
PRINT SPR NUMBER, BY ENTRY, MODULE WHERE DESCRIBE TEMP FIX EXISTS AND LEVEL FOUND GE number AND SPR NUMBER GT number AND SPR NUMBER LT number:

Method 2:
PRINT C1, BY ENTRY, MODULE WHERE C36 EXISTS AND LEVEL FOUND GT number AND SPR NUMBER GT number AND C1 LT number:

Method 3:
PRINT C1, BY ENTRY, C16 WHERE C36 EXISTS AND C5 GT number AND C1 GT number AND C1 LT number:

Sample Problem:

```
PRINT C1 , BY ENTRY , C16 WHERE C36 EXISTS AND C5 GT 15.0 AND
C1 GT 900 AND C1 LT 975:
 1*   916
   16*  MERGE
 1*   937
   16*  EXEC
 1*   969
   16*  GP4
 1*   972
   16*  GKAM
```

6.) Problem:
Find the SPR NUMBERs, MODULEs, SUBROUTINEs, and DESCRIPTIONs for certain SPR's encountered between two dates.

Method 1:
PRINT SPR NUMBER, BY ENTRY, MODULE, BY ENTRY, SUBROUTINE, BY ENTRY, DESCRIBE ERROR WHERE DATE REPORTED GT date AND DATE REPORTED LT date AND SPR NUMBER GT number:

Method 2:
PRINT C1, BY ENTRY, C16, BY ENTRY, SUBROUTINE, BY ENTRY, DESCRIBE ERROR WHERE C7 GT date AND DATE REPORTED LT date AND C1 GT number:

Method 3:
PRINT C1, BY ENTRY, C16, BY ENTRY, C18, BY ENTRY, C34 WHERE C7 GT date AND C7 LT date AND C1 GT number:

Sample Problem:

```
PRINT C1, BY ENTRY, C16, BY ENTRY, SUBROUTINE, BY ENTRY,
DESCRIBE ERROR WHERE C7 GT 01/01/73 AND DATE REPORTED LT
01/31/73 AND C1 LT 1000:
 1*      958
   16*  SEM1
   34*  END OF DATA ON UNIT 1.  SHOULD NOT HAVE A SYSTEM ABEND.
   34*  SYSTEM SHOULD PROTECT ITSELF FROM EOD INSTEAD OF TAKING
   34*  AN OC5
```

SYMBOLS AND TERMS

?	When a "question mark" appears on the scope, it indicates System 2000 is available for questioning by the user through the keyboard. An example is: ?PRINT USER NAME:
:	A "colon" must be the last character of each System 2000 command; examples are: LOAD: PRINT SPR NUMBER:
CR	"CR" means carriage return, which is a key on the typewriter that transmits a line of information and begins another line. It may be labeled differently on your terminal; however, until the return key is depressed, no information is transmitted to the central computer. The user can correct, delete or transmit information to the central computer one line at a time; however, no correction can be made to a line after the line has been transmitted by pressing the carriage return key.
READY	"READY" appears on the scope when the KRONOS System is idle and is ready for input from the user.
KRONOS	"KRONOS" is the operating system for CYBERNET. It is a time-sharing system.
CYBERNET	"CYBERNET" is the name used by Control Data Corporation for its nationwide system of computers which can be used on a time-utilized basis by the general public through modes such as a telephone and a desktop computer terminal.
-S2KV2	These are the call letters for System 2000.
SYSTEM 2000	"System 2000" is a multi-purpose data management system. It is the software used to support ECIS.

CONCLUDING REMARKS

An Error Correction Information System for the NASTRAN Structural Analysis computer program has been developed. This system consists of two data bases stored on a nationally accessible computer in the CYBERNET network. The first data base contains up-to-date information concerning all active Software Problem Reports (SPR's). This data base is maintained and updated by the NASTRAN Systems Management Office (NSMO). It can be accessed and queried but not updated by the user community. The second data base is a communications link between NSMO and the user community. On this data base, users can report SPR's to NSMO and NSMO can report general information to users. The contents of this second data base are largely temporary, and information can be added to, modified, or deleted as appropriate.

ECIS can be accessed through users' desk-top interactive computer terminals. The system does not require extensive training to operate and all needed instructions are contained in this report along with trial examples.

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