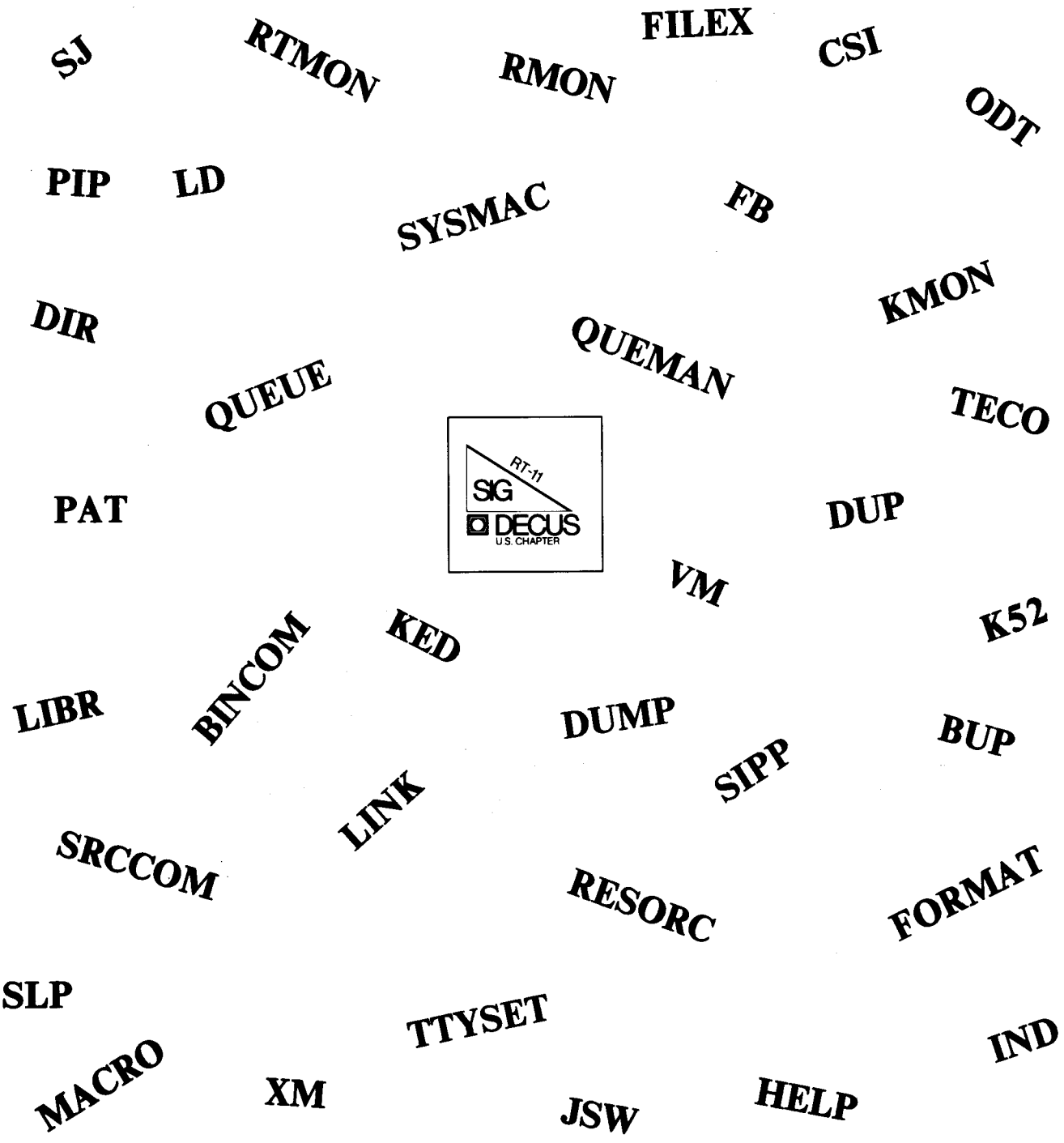
THE mini• tasker

DECUS
RT-11 SIG NEWSLETTER

January 1984 Volume 10, Number 1



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DECUS
RT-11 SIG NEWSLETTER

JANUARY 1984 VOLUME 10, NUMBER 1

Contributions to the newsletter should be sent to:

Ken Demers
MS-48
United Technologies Res. Ctr.
East Hartford,Ct. 06108
(203) 727-7139 or 7240

Other communications can be sent to:

John T. Rasted
JTR Associates
58 Rasted Lane
Meriden,Ct. 06450
(203) 634-1632

RT-11 SIG
C/O DECUS
One Iron Way
MR2-3/E55
Marlboro,Ma. 01752
(617) 467-4141

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RT-11 SIG CONTRACTS

RT-11 SIG Chairman
JOHN T. RASTED
JTR Associates
58 Rasted Lane
Meriden, CT 06450
(203) 634-1632

Newsletter Editor
DECNET Contact
KEN DEMERS
MS-48
United Tech. Research Ctr.
Silver Lane
East Hartford, CT 06108
(203) 727-7139 or 7240

RT-11 Handout Editor
RALSTON BARNARD
Division 2565A
Sandia Laboratories
Albuquerque, NM 87185
(505) 844-5115

Structured Languages Contact
MARK BARTELT
HSC Research Development Corp.
555 University Ave.
Toronto, Ontario
Canada M5G 1X8
(416) 597-1500 Ext 4588
or 598-5982

APL Contact
DOUG BOHRER
Bohrer & Company
903 Ridge Rd.
Suite 3
Wilmette, Il 60091
(312) 251-9449

TSX Contact
MACRO Contact
NICK BOURGEOIS / 9238
Sandia Laboratories
P.O.Box 5800
Albuquerque, NM 87185
(505) 844-8088

TECO Contact
Product Planning Contact
JOHN CROWELL
CROW4ELL Ltd.
145 Andanada
Los Alamos, NM 87544
(505) 662-3893

Standards Coordinator
JAMES R. CUTLER
Software Results Corp.
1229 West Third Ave.
Columbus, OH 43212
(614) 421-2094

Tape Copy Coordinator
JOSEPH LACHMAN
Lachman Associates, Inc.
645 Blackhawk Drive
Westmont, IL 60559
(312) 986-8840
(303) 451-3872

COBOL Contact
Wish List Contact
BILL LEROY
Information Resources, Inc.
470 E. Paces Ferry Rd. N.E.
P.O. Box 52661
Atlanta, GA 30355
(404) 231-3117

RT-11 Hardware Contact
CARL LOWENSTEIN
Univ. of Calif., San Diego
Marine Physical Lab. of the
Scripps Inst. of Oceanography
San Diego, CA 92152
(619) 294-3678

C Contact
JACK PETERSON
Horizon Data Systems
1901 Wildflower Terrace
Richmond, VA 23233
(804) 740-9244

FMS-11 Contact
SUSAN S. RASTED
Software Dynamics Inc.
1000 Yale Ave.
Wallingford, CT 06492
(203) 265-2226

Symposia Coordinator
NED RHODES
E-Systems
Melpar Division
7700 Arlington Boulevard
Falls Church, VA 22046
(703) 560-5000

RT DECUS Library Contact
TOM SHINAL
General Scientific Corp.
1684 East Gude Drive
Rockville, MD 20850
(301) 340-2773

BASIC Contact
ED STEVENS
E M D A Inc.
111 South Hudson St. #B
Pasadena, CA 91101
(213) 795-5991

CAMAC Contact
J. W. TIPPIE
Kinetic Systems Inc.
11 Mary Knoll Drive
Lockport, IL 60441
(815) 838-0005

FORTRAN Contact
RT-11 LUG Contact
RON TRELLUE
Division 7523
Sandia Laboratories
Albuquerque, NM 87185
(505) 844-0955

USER INPUT

Here are some notes I took at the DECUS Europe Symposium in Zürich. The RT-11-sessions were in general very well attended this year and Symposium attendance set a new record.

At one of the sessions it was indicated that RT-11 would probably be supported on the Pro (I believe DEC have announced this in the meantime).

In the RT-11 future session coloured slides heralding FORTRAN 77, BASIC V.3 and PASCAL for RT-11 were shown and discussed. Although DEC did not commit these products seem to well advanced in the pipeline. I would expect an even clearer picture to be presented at Las Vegas.

During the magic session I took a few notes on the wishlist items. There were other requests that seem to have got lost as the evening became more fluid.

SET CLOCK 50
As usual with every new release of RT-11 Europeans felt the need for a simple way to adapt RT-11 to 50 Hertz.

DOS MACTAPE
FORTRAN 77
FILES-11 EXCHANGE
These require no explanation. They are extended part of any wishlist.

DIR/DELETED
UNDELETE
Users would like to be able to continue the standard DIR options with /DELETED. An UNDELETE command should simply turn tentative files with a specified file name into permanent files, ingnoring duplicates.

KED: Many requests for KED including a start-up file to configure KED; 80 characters per line instead of 78; option to truncate lines rather than wrap-around; possibility to view the auxillagfile.

I look forward to seeing you in Las Vegas.

All the best

Ian Hammond

ih/um

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Enclosed is a modification made to the LS: handler which enables output of long ASCII character strings. This modification was made to enable driving of a Tektronix plotting terminal with an 11/23 running under TSX. The previous technique used was to map the I/O page to our program and then output the data via direct register addressing. With the development of the new handler, TK:, plot files can be spooled using the TSX spooler, and plotting files which have been written to disk can be plotted using PIP (COPY command). Finally, it seems like TSX is alot more content to be running all of the plotting software via a standard handler.

The two simple changes to the handler are described below:

(1) Column numbers (COLSIZ and TK.SIZ) are ignored which enables output of infinitely long unformatted character strings. This is accomplished by commenting out the COLCNT counter:

```
SUB       (PC)+,R5
O$LC:       .WORD 0
PCHAR:
; DEC     COLCNT
; BLT     IGNORE
  ASLB    (PC)+
```

(2) CTRL is now the default value for the SET CTRL/NOCTRL command. CTRL is the desired setting for graphic plotting. This is accomplished by substituting the BNE PRINTC command for BNE IGNORE at O$CTRL.

```
TABCNT:     .WORD 1
O$CTRL:  BNE      PRINTC          ; Default: => CTRL
; BNE     IGNORE   ; Default: => NOCTRL
  CMP     LINCTR,(PC)+
O$SKIP:     .WORD 0
```

With these changes, the flexibility of the LS handler (i.e. being able to SET CSR, VECTOR, etc.) is retained while the restrictions (i.e. column width) are eliminated. I hope this information is useful.

Sincerely,

Richard L. Lieber, Ph.D.

On an occassional basis, I have deleted a file in error. If I'm luck y, the file can be found using DIR/DELETE. More often, the disk is fragmented, and the deleted file is in the middle of a lot of garbage. Searching for the file can waste a lot of time. I have found that a simple help for this problem is to make a file copy of the directroy every time I boot-up the system. For RT-11, using a Winchester disk, I have included the command DIR/OU:DIR.LST/FU/BL in STARTS.COM. The resulting file, DIR.LST, will generally have all the necessary ingredients for finding and renaming the old file using CR FILE.EXT/ST:m/ALL:n, (assuming there have not been extensive changes in the directory since the last boot-up). This solution may already be old hat to your readers. If not, I hope that they may find it useful.

Sincerely yours,

Don Santeler

Process Applications, Inc.
P.O. BOX 3136 OAK RIDGE, TN. 37830 615-482-1608

METHOD FOR SHORTENING LINK MAPS

Susan S. Rasted
Software Dynamics, Inc.
1000 Yale Ave.
Wallingford, CT 06492

I build large Fortran programs with over 100 overlaid subroutines and maps are invaluable as aids to help in the fight for every word available. Long map printouts are bulky to work with and all I really want to know is the region or segment in which a subroutine resides and the size of that subroutine. The following method will give a listing with just that information. It works on maps from links under the SJ, FB and XM monitors. It will need adjustment if you are using virtual overlays under XM.

To make life easier:

```
                    <R> = RETURN key
                    <E> = ENTER key
                <200> etc = Numerals on the keyboard
                    5 etc = Numerals on the keypad
                    <G> = PF1 key on the keypad (the GOLD
                          key)
      Model: or Command: = KED prompts which we will see
                      ! = beginning of explanation of
                          the instruction
```

I assume that you have a link map of a program with multi overlays or segments and that you have the KED editor in a version late enough to include the LEARN command. I also assume that KED has search set general.

```
EDIT/KED  FILE.MAP<R>          !open map using KED editor
<G>7                           !ask for command prompt
        Command: LEARN<E>      !begin a learn sequence
<G>PF3                         !ask for model prompt
        Model: Ctrl L 4        !look forward for FF char.
<G><4>PF4                      !delete FF and next 3 lines
<G>S                           !save the learn sequence
<G><2000><G>X                  !repeat learn sequence 2000
                                times or until end of file
                                is found (KED will beep)
<G><5>                         !return to beginning of map
<G>7                           !ask for command prompt
        Command: OUT LP:<E>    !open an output file which
                                will receive your listing
```

At this point you have to decide where you want your short map. For example you can open a file on the disk by typing OUT FILE.NAM and the listing will go to a file on the disk named FILE.NAM. In addition to memory space, I am usually tight on disk space. I therefore open the line printer as the output file using the command in the directions above. If you like to save maps on your disks you can name the short map with the extension .SMP for short map and then delete the long map to save space.

```
<G>7                           !ask for command prompt
        Command: W <3><E>      !write 3 lines  to the
                                output file
<G>7                           !ask for command prompt
        Command: LEARN<E>      !begin a learn sequence
<G>PF3                         !ask for model prompt
        Model: Segment size 4  !look forward for segment size
<--                            !move cursor to beginning of
                                line so segment size will be
                                indented
<G>7                           !ask for command prompt
        Command: W <3><E>      !write 3 lines to output
                                file
<G>PF3                         !ask for model prompt
        Model: $Code 4         !look forward for $code
0                              !move to beginning of next
                                line
<G>7                           !ask for command prompt
        Command: W 1<E>        !write 1 line to output file
<G>S                           !save the learn sequence
```

```
<G><2000><G>X                  !execute the learn sequence
                                2000 times or until the end
                                of the map. KED will beep
                                when it reaches the end.
5                              !put KED in backup mode
<G><2>0                        !move cursor up 2 lines from
                                bottom of map
4                              !return KED to forward mode
<G>7                           !ask for command prompt
        Command: W R<E>        !write last lines of map to
                                output file
<G>7                           !ask for command prompt
        Command: CLO<E>        !close the output file
<G>7                           !ask for command prompt
        Command: QUIT<E>       !we're done and we don't
                                want to save another
                                version of the long map
```

The following is a sample of a short map listing. It illustrates one weakness in the map shortening routine. In overlay region 4 I had more than 1 line of file names in a segment and only the first line of names prints out. The ones that are listed are enough for me to know where to find the group and I haven't found the weakness a problem.

```
RT-11 LINK  V08.01      Load Map        Wednesday 30-Nov-83 09:43  Page 1
FILE  .SAV      Title:  FILE    Ident:  FORV02  /B:001200

 Segment size = 100604 = 16578. words

Overlay region  000001  Segment 000001
                       'DATSUB@ 100634
 Segment size = 001042 = 273.   words
                    .
                    .
                    .
Overlay region  000004  Segment 000074
                       IHEAD @ 131654  MOVST @ 132026  ISTR  @ 132166
 Segment size = 000620 = 200.   words

Transfer address = 034462, High limit = 133554 = 23478. words
```

I sincerely hope that you like this space, time and eye saver and will share any goodies that you use to cut corners.

```
                                ------------------------
APPLICATION NOTE :      RT 11   I FORTRAN IV SOURCES    I
******************              I AVAILABLE FROM AUTHOR I
                                ------------------------

************************************************************

HASDAN : AN ORIGINAL UNIVERSAL BURSTING "HASH-CODING" FUNCTION
         PERMITTING ALL ASCII CODES, INDEPENDENT OF THE CHARACTERS
         SOURCES AND INSENSITIVE TO AGGREGATES WITH AN EXPECTED
         LOW RATE NUMBER OF COLLISIONS.
```

BY DANIEL GUINIER

LABORATOIRE DE PHYSIOLOGIE COMPAREE DES REGULATIONS
GROUPE DE LABORATOIRES DU CNRS DE STRASBOURG-CRONENBOURG
23 RUE DU LOESS
B.P. 20 CR
67037 STRASBOURG CEDEX FRANCE

****

INTRODUCTION :
****

WHEN A "HASH-CODING" FUNCTION IS USED IN AN APPLICATION IN WHICH THERE ARE SUCCESSIVE BLOCKS OF EMPTY AND AGGREGATED ADDRESSES, THAT IS THE CONSEQUENCE OF NON-UNIFORM DISTRIBUTION OF THE ADDRESSES AND A FACT IN DIRECT RELATIONSHIP WITH THE SOURCE USED (FRENCH, ENGLISH, FORTRAN, COBOL, ANY DICTIONARY, ...). THERE ARE TWO GENERAL SOLUTIONS TO THIS PROBLEM :

A) FROM INITIAL STUDIES OF THE DISTRIBUTIONS OF THE CHARACTER INFORMATION INCLUDED IN THE SOURCES BY WAY OF THE FREQUENCY DISTRIBUTIONS OF MONOGRAMS, BIGRAMS AND TRIGRAMS. WITH THESE RESULTS, THE USER IS ABLE TO WEIGH ANY "HASH-CODING" FUNCTION BUT, HE HAS TO RECOMMENCE AT EACH SOURCE OR DICTIONARY TO OBTAIN A LOW RATE OF COLLISIONS. WE HAVE DISCUSSED THIS OBJECTION IN A PREVIOUS PAPER FOR THE "HDAN" FUNCTION.

B) BY A SPECIAL "HASH-CODING" FUNCTION THAT IS ABLE TO BURST THE AGGREGATES AT FREE ADDRESSES BY WAY OF A RANDOM GENERATOR. WE HAVE USED A CONGRUENCE METHOD WITH FACTORS APPROPRIATELY SEGMENTED. NUMERICAL OVERFLOWS CAN BE COMPUTED WITHOUT HARDWARE OVERFLOWS; THE RESULTS OBTAINED ARE NOT MACHINE-DEPENDENT. THE ADDRESSES ARE COMPUTED BY THE WAY OF THE SUMMARIZED FORMULA WITH TWO ARGUMENTS DIMENSIONNED TO SIX :

ADDRESS = F (M , NS)

WHERE THE M'S REPRESENT THE FULL "PAST" OF PREVIOUS CHARACTERS AND THE NS'S, THE ACTUAL SIX CHARACTERS. THE RANDOM GENERATOR IS USED ONLY ONCE PER GROUP OF SIX CHARACTERS AND THE ASCII VALUE OF THE INFORMATION IS STORED IN THE SUCCESSIVE NS(). IN THIS CASE, ONLY THE "PAST" OF THE FUNCTION IS MODIFIED WITHOUT USE OF THE DIFFERENT RESULTS OBTAINED AFTER EACH GROUP OF SIX CHARACTERS. THIS PERMITS GOOD DISPERSION WITHOUT CONDENSATION WHEN THE NUMBER OF GROUPS INCREASES.

THE PURPOSE OF THE PRESENT PAPER IS TO ILLUSTRATE THE RESULTS OBTAINED BY OUR FUNCTION "HASDAN" USING THIS SECOND PRINCIPLE.

BIBLIOGRAPHY :
****

K.D. SENNE (1974) : MACHINE INDEPENDENT MONTE-CARLO EVALUATION OF THE PERFORMANCE OF DYNAMIC STOCHASTIC SYSTEMS. (J. STOCHASTICS, VOL. 1, PP. 215-238).

D. GUINIER (1983) : HDAN : A KEY-TO-ADDRESS TRANSFORM "HASH-CODING" LINEAR FUNCTION ACCEDING DIRECTLY TO ELEVEN COMPRESSED CHARACTERS. (DECUS MINI-TASKER, IN PRESS DECEMBER 1982 RT11 SIG).

D. GUINIER (1983) : DOST1 : A READY-TO-USE PROGRAM FOR STATISTICAL ANALYSIS OF THE CONTENTS AND THE STRUCTURE OF EXISTING BIBLIOGRAPHIC FILES. (DECUS MINI-TASKER, IN PRESS DECEMBER 1982 RT11 SIG).

SOME PROPERTIES ABOUT "HASDAN" :
****

A) THE BURSTING POWER OF THE FUNCTION IS INDEPENDANT OF THE LENGTH OF THE SETS OF CHARACTERS : FIG.1. SHOWS THAT THE UNIFORM DISTRIBUTION IS MAINTAINED FOR ANY LENGTH OF CHARACTER CHAINS, FOR THREE SETS OF CHARACTERS OF WHICH THE LENGTH AND THE NATURE HAVE BEEN RANDOMIZED AND REPEATED 500 TIMES ON A FILE PRESENTING 500 DISPONIBLE ADDRESSES THAT DEFINES A LOADING FACTOR OF 100%.

B) THE BURSTING POWER OF THE FUNCTION IS INDEPENDANT OF THE NATURE OF THE SETS OF CHARACTERS : FIG.1BIS. SHOWS THAT THE UNIFORM DISTRIBUTION IS MAINTAINED WHATEVER THE NATURE OF THE CHARACTERS WITHIN THE CHAINS (DIFFERENT, RANDOMIZED OR THE SAME) FOR THE SAME CONDITIONS (LOADING FACTOR OF 100% AND 500 POSSIBLE ADDRESSES).

EX : FOR 500 POSSIBLE ADDRESSES AND CHARACTERS 'P' AND 'A' :

ADDRESS	CHAIN	
475	'P'	(1 CHARACTER)
1	'PPP'	
46	'PPPPPPP'	(7 CHARACTERS)
230	'PPPPPPPPP'	
183	'PPPPPPPPPPPPP'	(13 CHARACTERS)
15	'PPPPPPPPPPPPPP'	
415	'PPPPPPPPPPPPPPPPPPP'	(19 CHARACTERS)
153	'PPPPPPPPPPPPPPPPPPPPP'	
238	'PPPPPPPPPPPPPPPPPPPPPPPPP'	(25 CHARACTERS)
480	'PPPPPPPPPPPPPPPPPPPPPPPPPP'	
210	'PPPPPPPPPPPPPPPPPPPPPPPPPPP'	
.	.	
.	.	
.	.	
64	'PPPPPPPPPPPPPPPPPPPPPPPPPPPPP PPPPPPPPPPPPPPPPPPPPPPP'	
7	'PPPPPPPPPPPPPPPPPPPPPPPPPPPPP PPPPPPPPPPPPPPPPPPPPPPPPPPP PPPPP'	
.	.	
280	'A'	(1 CHARACTER)
453	'AAA'	
437	'AAAAAAA'	(7 CHARACTERS)
316	'AAAAAAAAAAAAA'	(13 CHARACTERS)
.	.	
.	.	
.	.	

C) DOUBLE EXPONENTIAL RELATIONSHIP BETWEEN THE PERCENTAGE OF FREE ADDRESSES AND THE LOADING FACTOR : FIG.2. SHOWS THE PERCENTAGES OF FREE ADDRESSES (Y) AS A FUNCTION OF THE RATIOS (X) : POSSIBLE ADDRESS NUMBER / NUMBER OF ITEMS. THE RELATION MAY BE EXPRESSED AS A DOUBLE EXPONENTIAL OF THE FORM : Y=Y1*(1-EXP(-A1*X)) + Y2*(1-EXP(-A2*X)) WITH :

Y1= 79.06 A1=0.614
Y2= 19.60 A2=0.088

D) DOUBLE EXPONENTIAL RELATIONSHIP BETWEEN THE PERCENTAGE OF COLLISIONS AND THE LOADING FACTOR : FIG. 3. SHOWS THE PERCENTAGES OF COLLISIONS (Y) AS A FUNCTION OF THE RATIOS (X) PREVIOUSLY DEFINED. THE RELATION MAY BE EXPRESSED AS A DOUBLE EXPONENTIAL OF THE FORM : Y=Y1*(-A1*X)) + Y2*(-A2*X)) WITH

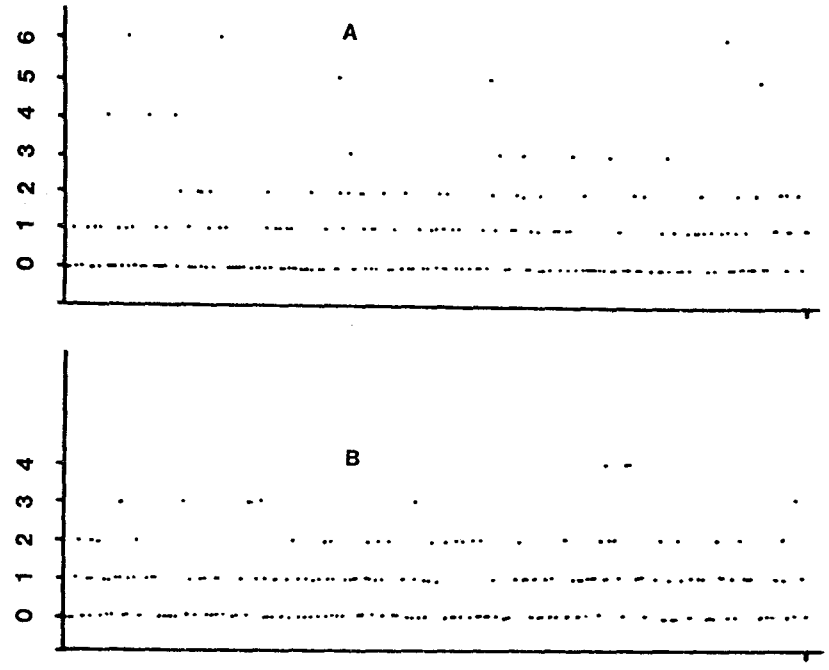
Y1=144.74 A1=1.560
Y2= 7.90 A2=0.287

E) DOUBLE EXPONENTIAL RELATIONSHIP BETWEEN THE RATIOS (Y) : % OF ADDRESSES WITH COLLISION(S) ON % OF FREE ADDRESSES AND THE PREVIOUSLY DEFINED LOADING FACTOR (X) : FIG. 4. SHOWS THIS REALATION AS A DOUBLE EXPONENTIAL OF THE FORM : Y=Y1*(-A1*X)) + Y2*(-A2*X)) WITH :

Y1=455.11 A1=1.952
Y2= 11.59 A2=0.328

CONCLUSION :
****

"HASDAN" MAY BE CONSIDERED AS A UNIVERSAL FUNCTION WHEN APPLIED TO MANAGEMENT OF ANY SOURCES WITH "HASH-CODING" TECHNIQUES, WHATEVER THE NATURE OR THE LENGTH OF THE CHAINS OF CHARACTERS.
"HASDAN" IS NOT SENSITIVE TO AGGREGATES AND, WITH THE COMPUTED PARAMETERS Y1, Y2, A1 AND A2, IT IS POSSIBLE TO ADJUST THE LOADING FACTOR TO THE NECESSARY EFFICIENCY, SINCE THERE IS A DUALITY BETWEEN THESE TWO LAST CONSIDERATIONS.
WE SUGGEST A LOADING FACTOR OF 25% TO FORECAST A COLLISION RATE LESS THAN 3% .



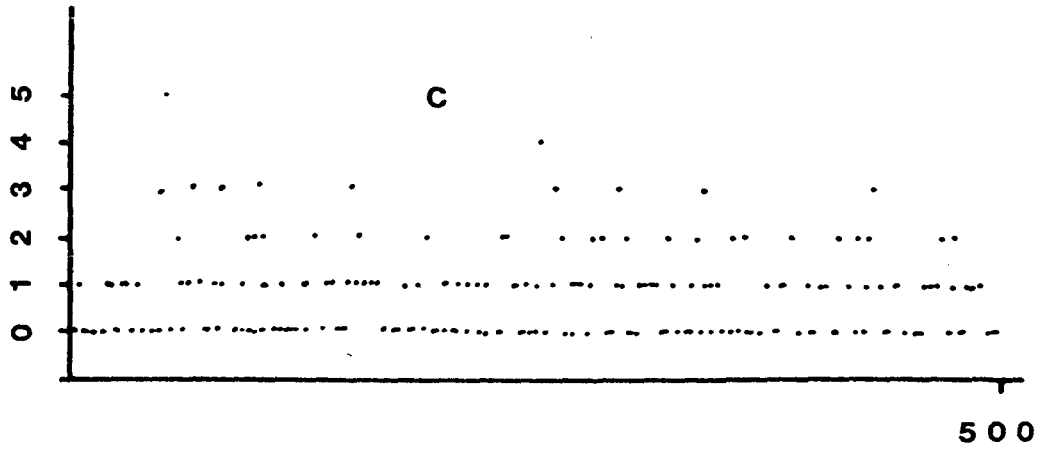


FIG.1. Number of "collisions" in function of 500 adresses positions
A). For a set of 1 to 6 randomized characters.
B). For a set of 1 to 20 randomized characters.
C). For a set of 1 to 100 randomized characters.

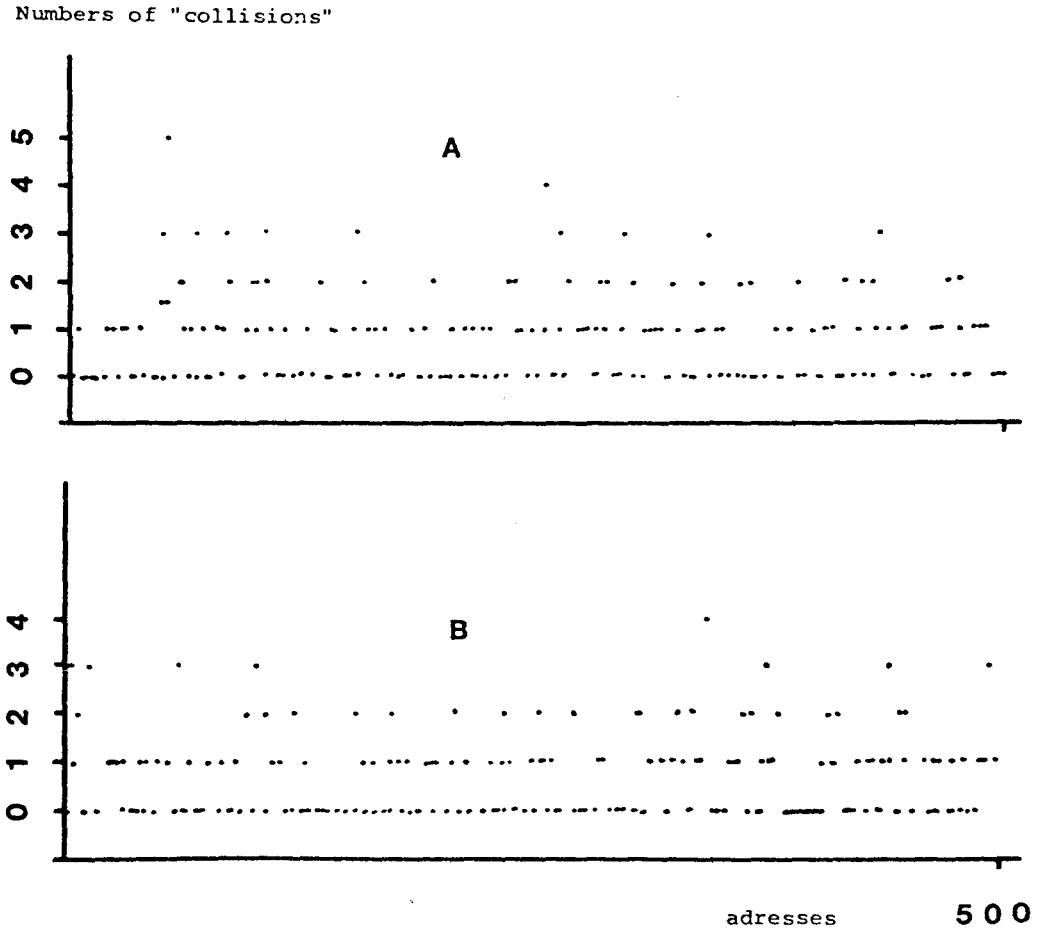


FIG.1 bis. Identity of efficency of the method for identical or randomized characters in the sets.
A). Randomised sets.
B). Identity of characters within the sets.

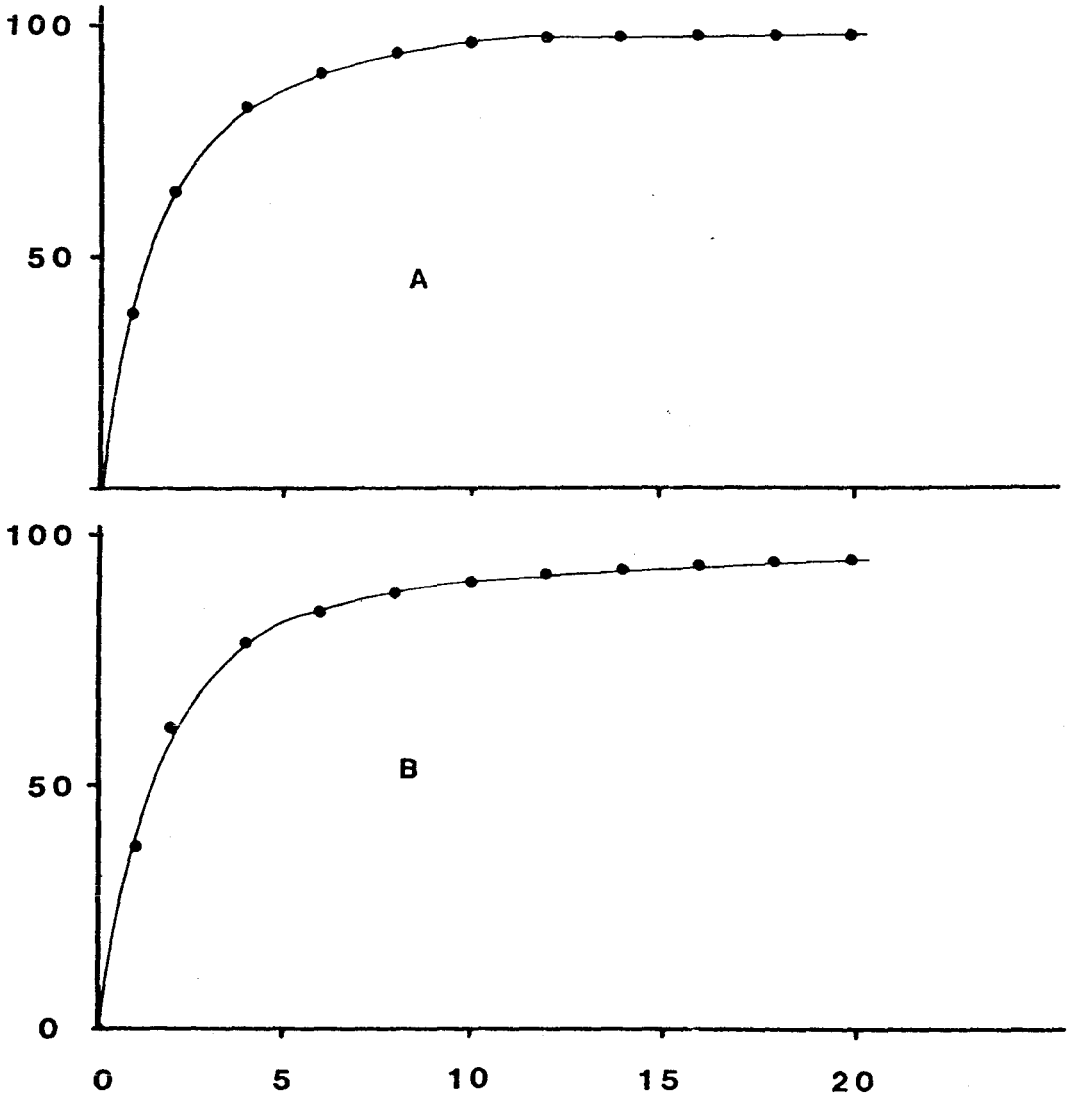
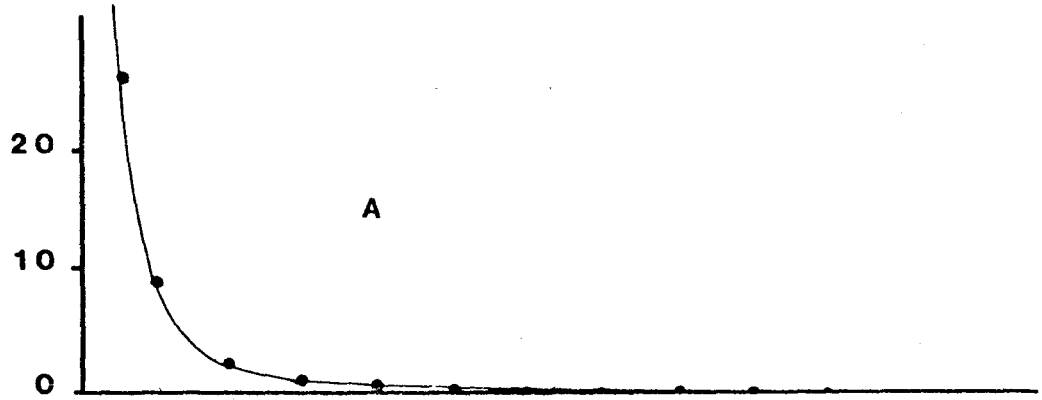


FIG.2. Percentages of free adresses in function of the ratios numbers of possible adresses on numbers of items.
A). For identical characters in the sets (1 to 100 characters).
B). For randomized characters in the sets.

FIG.3. Percentages of "collisions" in function of the ratios numbers of possible adresses on numbers of items.
A). For identical characters in the sets (1 to 100 characters).
B). For randomized characters in the sets.



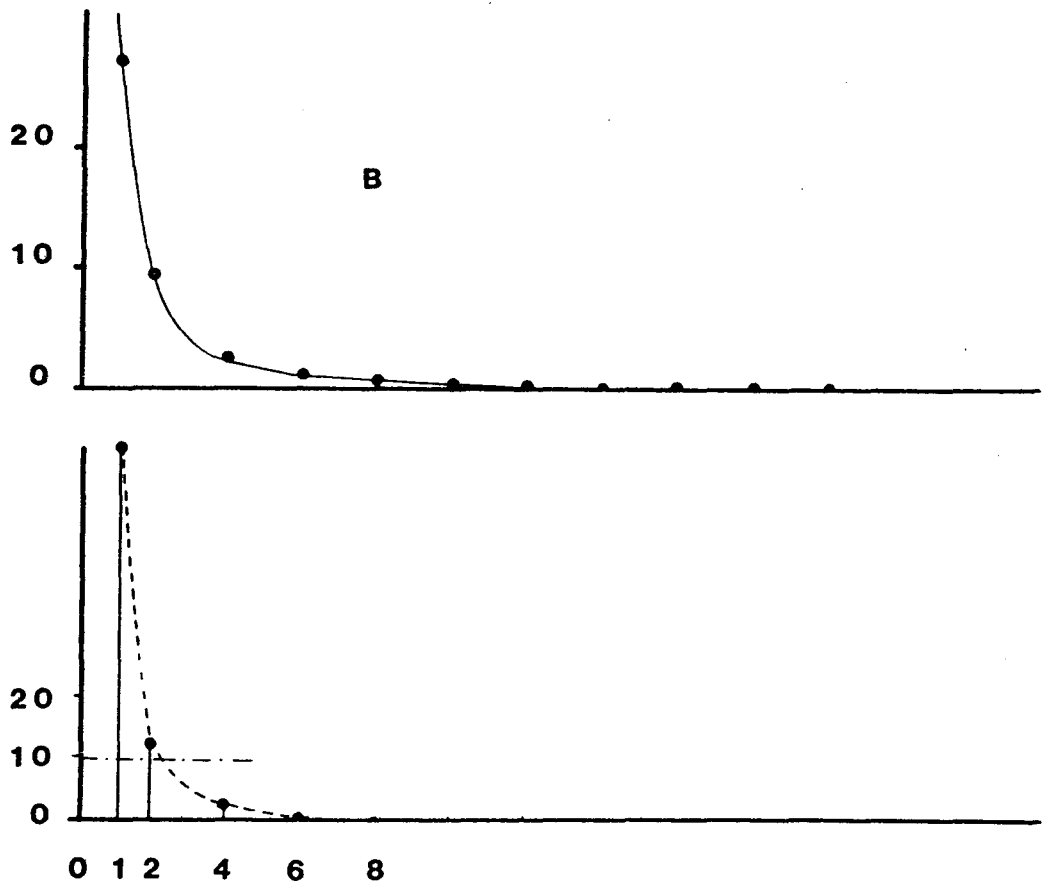


FIG.4. Ratios percentages of adresses with collision(s) on percentages of free adresses in function of the ratios numbers of possible adresses on numbers of items.

DEC INPUT

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As I told you on the phone today, WORKING WITH RT-11: COMMANDS AND UTILITIES will be available in February and the rest of the series will be available in the Spring.

The ordering information for the newsletter follows:

Ordering Information:

Postage and handling are free when order is prepaid. A Ten percent discount applies to orders of two or more copies. All orders should be submitted to Digital Press, 12A Esquire Road, Billerica MA 01862. The list price and order number for each book follows.

WORKING WITH RT-11, 1984, paperbound, 150 pp, $19.00, (Order Number EY-00021-DP-001)

PROGRAMMING WITH RT-11, VOL I, Spring 1984, paperbound, 200 pp, $24.00, (Order Number EY-00022-DP-001)

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If you need more information, please call. Thank you for the opportunity to inform your newsletter readers of our new series.

Sincerely,

Joan Weber

Joan Weber
617/275-4345

*** The following titles initiate the DECbooks "RT-11 Programming Series" authored by the Digital Course Development Group in Reading, England.

WORKING WITH RT-11: COMMANDS AND UTILITIES

WORKING WITH RT-11 is designed for new or potential users of RT-11. This book is written for those who understand how a computer functions, and who are familiar with terms such as bit, byte, word, and file.

WORKING WITH RT-11 covers system organization, the editors most often used on RT-11 systems, using prepared applications, and efficient use of files.

Table of Contents:
Identifying RE-11 Components
Getting Started
Storing Data on Disks
Using KED to Edit Files
Editing and Issuing Monitor Commands
Using Utility Programs
Developing Programs
Creating Files of Commands
Conserving Space with Device Support

1983, paperbound, 150 pages, $19.

PROGRAMMING WITH RT-11: VOLUME 1 (PROGRAM DEVELOPMENT FACILITIES)

The first volume of PROGRAMMING WITH RT-11 teaches effective use of RT-11 to develop FORTRAN, MACRO, and BASIC-11 programs. It also covers program debugging, overlays, libraries, FORTRAN IV and BASIC-11 subroutine conventions for MACRO-11 interfacing.

Table of Contents:
Developing Programs in MACRO-11 and FORTRAN IV
Executing Programs
Developing Programs in BASIC-11
Debugging Programs
Using Libraries
Designing and Implementing Overlay
Using Language Interfaces

1983, paperbound, 200 pages, $24.

PROGRAMMING WITH RT-11: VOLUME 2 (CALLABLE SYSTEM FACILITIES)

The sequel to Volume 1, this book teaches the use of RT-11 system services in programs. Synchronous and nonsynchronous I/O operations, and programmed requests for both file and terminal I/O, and foreground/background communication are also covered.

Table of Contents:
Using System Services
Accessing System Information
Controlling Program Execution
Using I/O Systems
Using Terminal I/O
Using Multi-Terminal I/O
Using Queued I/O
Nonsychronous Queued I/O
Scheduling & Blocking
Communication Between Jobs
Memory Use
Programmed Use of the Command String Interpreter
Time-Dependent Programming

1983, paperbound, 200 pages, $24.

TAILORING RT-11: SYSTEM MANAGEMENT AND PROGRAMMING FACILITIES

TAILORING RT-11 is designed for experienced RT-11 users who need to perform system mangement functions and for programmers who want to gain an in-depth understanding of the system. The book discusses system generation, system and volume maintenance procedures, internal allocation of system resources, the scheduler, writing a device driver, and memory management directives.

Table of Contents:
Volume Maintenance
Installation and System Generation

System Maintenance
The Queue Package and the Error Logger
PDP-11 Architecture
Extended Memory Management
Device Communication
Writing an Interrupt Service Routine
Writing a Simple Device Handler
Additional Features for Device Handlers

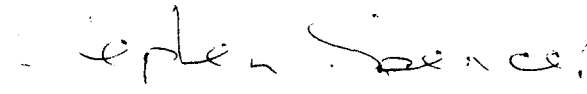
1983, paperbound, 200 pages, $36.

Although every effort has been made to make the 'RT-11 Programming Series' self-contained, the reader may have to refer to manuals from the RT-11 documentation set (RT-11 Version 5.0.) for additional information. A list of manuals that provide supplementary information is included at the end of each book.

USER REQUESTS

Can you please advise whether there is, within the DECUS Library any network available to connect two LSI 11's with RT11 version 4 and TSX+ version 2.0.

Yours faithfully,



S Spencer
Systems Co-Ordinator

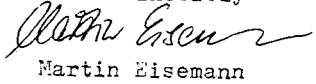
CompAir Power Tools Limited

Darren Works
Ystalyfera
Swansea Glamorgan SA9 2EB

telephone Glantawe 842481 (STD 0639)
telegrams Broom Ystalyfera
telex 48158

I am wondering if you have any knowledge if the statistical package "SPSS"(North Western University) has been adapted and is available for DEC's RT 11 system (PDP 11/24)?

Yours sincerely



Martin Eisemann
University of Umeå
Department of Psychiatry
S-901 85 Umeå
SWEDEN

USER RESPONSES

Name: Robert S. Pickell

Mailing Address: Pennsylvania Scale Co.
21 Graybill Road.
P.O. BOX 98
Leola, PA 17540

Phone Number: 717-656-2653 ext 208

Date submitted: 03-NOV-83

An answer to this month's question about 6502 cross assemblers available for RT-11 or RSX-11M:

Boston Systems Office has an excellent set of 6502 cross development tools available for RT-11, RSX-11M, IAS, RSTS and VAX-11 in RSX compatibility mode. Currently BSO supports an assembler, object code conversion utility (used to convert BSO object code format to practically any manufacture's object format such as Intel, Motorola, Textronix, MOS technology, etc ... so another words no matter what manufacture's in-circuit emulator or PROM burner you have the BSO object conversion utility will most likely be compatible), a cross reference ultility, and last an object code librarian. One final note on BSO they are currently developing (for all you real programmers) a 6502 PASCAL cross compiler! BSO'S address is given below.

Boston Systems Office
469 Moody Street
Waltham, MA 02154
Tel: (617)894-7800

DECUS LIBRARY

RT-11 Device Handlers
from the
DECUS Program Library

The DECUS Program Library contains many RT-11 device handlers. This short note briefly describes these handlers where possible and identifies their order numbers. The descriptive information has been gleened from the Annotated Tape Directories, the DECUS Program Library Catalog, and the Catalog Updates. Some duplication exists in the Symposia Tapes.

11-SP-17. Symposium Tape from the RT-11 SIG, Fall 1980, San Diego.

HS and PH, miscellaneous handlers.

11-SP-26. Symposium Tape from the RT-11 SIG, Spring 1981, Miami.

AD is a V4 handler for the AD11 analog-to-digital converter.

HS handler from Fall 80 updated to V4.

KB is a V4 device independent serial line (DL11/DLV11) I/O handler. Conditional code is included for use with the XM monitor and TSX-Plus. Eleven SET options are available.

VM is a virtual memory handler from Fall 79 with fix to boot.

11-SP-27. Symposium Tape from the Canadian RT-11 Library Group, Fall 1981, Banff.

KB is a serial line I/O handler, V4.0.

11-SP-30. Symposium Tape from the RT-11 SIG, Fall 1981, Los Angeles.

AR is a pseudo device (subdevice) handler.

XD is a virtual device (subdevice) handler.

11-SP-32. Symposium Tape from the RT-11 SIG, Spring 1982, Atlanta.

XD is a virtual device (subdevice) handler.

11-SP-48. Symposium Tape from the RT-11 SIG, Fall 1982, Anaheim.

MO is a general modem handler.

XD is a virtual device (subdevice) handler.

11-SP-53. Symposium Tape from the RT-11 SIG, Spring 1983, St. Louis.

VM is a version of the DECUS VM handler modified so it won't clear all of memory when it sizes itself.

XD is a virtual device (subdevice) handler.

11-SP-??. Symposium Tape from the RT-11 SIG, Fall 1983, Las Vegas.

AR is the archive handler from a previous RT-11 tape. It is a subdevice handler that allows a file on a large disk to appear as a directory structured device.

XD is a virtual device (subdevice) handler.

11-226. RO.MAC MT ROLLIN File Device Driver, October 1977.

RO is a magtape device driver that allows the user to access one disk rollout on a magtape containing any number of rollouts and treat the file as if it were a file structured device. The specified rollout file is then the pseudo disk RO:, available to the user for any operation that does not involve writing on the magtape (RO:).

11-391. A handler that converts a 2nd terminal into a line-printer, May 1979.

Makes a hardcopy, nonconsole terminal, simulate a lineprinter. Tab and form-feed characters are serviced (latter optional). Width and length of page are settable as well as lower case. It can also be set to leave eight blank lines around the crease between pages. Unlike a real line-printer, the terminal must be initially positioned to the top of the page in order to continue to conform to page boundaries. the program can put out filler characters for high baud rate terminals.

11-428. RP04/RP05 RT-11 V3 Device Handler, February 1980.

An RT-11 V3 device handler for the RP04/RP05 disk drive. Special features are: 1) Supports dual porting; 2) Supports all features found in other RT-11 V3 handlers i.e. error logging, extended memory, etc.; 3) Can read and/or write into FORTRAN Virtual Arrays; 4) Set commands.

11-472. KB Handler, December 1982.

This is an RT-11 V4.0 device independent terminal handler. It can be used in either the foreground or the background (but not both simultaneously) to read and write to a DL11/DLV11 controlled terminal. Conditional code is included for use with eighteen bit addressing. Eleven SET options are also included to permit configuration of the handler.

11-482. A Write Only Device Handler for the IEEE-488 Interface, May 1981.

This RT-11 device handler provides a means of writing to a "listen only" device on the IEEE-488 bus (IBV11 or IB11 interface). It was written specifically for use with the HP9872 plotter. The advantage of this handler as compared to the use of DEC's instrument bus subroutines is that it may be assembled for use with an XM monitor. A SET command is provided to enable the IEEE bus listener address to be changed. CSR addresses and vectors may be changed by editing the source file.

11-503. PLOT-11/RT, May 1980.

PLOT-11/RT for RT-11 is a software package containing a set of FORTRAN callable graphics subroutines and an XY11 plotter driver.

11-517. System Device Handler for RM02, RM03, RP04, RP05, RP06 and RT-11 V4, January 1982.

Source file and conditional files to build system device handlers for RM02, RM03, RP04, RP06 and RP06. Also includes several utilities. Only DB0 or DQ0 can be the system device, the other devices are slaves (non-bootable).

11-541. A FORTRAN/RT-11 Plotting System for the IEEE-488 HP9872S Plotter, February 1982.

This series of FORTRAN subroutines, the device handler PL and the queue programs are designed to provide a plotting system for use with the Hewlett Packard 9872S plotter and

the IBV11 IEEE-488 interface, running under RT-11. The handler also allows ASCII files to be "plotted" directly with the addition of the necessary plotter commands. This facility is useful for transferring tables or other text to the plotter.

11-571. Very Friendly Serial Device Handler, September 1982.

TA is a general purpose handler for extra terminals, graphics devices, and modems. Handler can be used with standard SYSGEN files including memory management and non-memory management options. Standard terminal SET commands include: PAGE/NOPAGE, and SCOPE/NOSCOPE. Also, an ECHO/NOECHO SET command is included for some remote computer I/O where an echo is unwanted. The handler will exit a "paged" state if a control-C is typed from the console terminal. Instructions are included for writing additional handlers which can run concurrently with TA and have the same operated characteristics. Details on use with FORTRAN programs are included. Also, FORTRAN compatibility is enhanced by eliminating the delays usually involved with the necessary REWIND commands. Instructions are included for use with foreground/backgroung monitor in the foreground.

11-595. Hewlett Packard 7470A Plotter Handler, October 1982.

HP is a Hewlett Packard 7470A plotter handler to be used in an RS-232 environment with XON-XOFF handshaking protocol. We have implemented it on our MINC RT-11 system. HP is a read/write handler and it is useful for digitizing or communicating with the plotter. Since most smart laboratory devices use XON-XOFF protocol, this handler might be easily modified for such devices.

11-596. Centronics 739 Serial Printer Handler, October 1982.

This program is a serial line printer handler that has been specifically designed for the Centronics 739 graphic printer to be used on MINC RT-11 systems. This handler takes into account many of the 739's features that the DEC LS handler does not.

11-609. An RT/VMS Communications Package, February 1983.

This is a two part package that runs under RT-11 and TSX-Plus to support communications and source file transfer between an RT-11 environment and VMS. The first part of the package is a FORTRAN program to support the communications protocol. The second part of the package is a special RT-11 driver written in MACRO to support modem communications at the system level. The driver has a large buffer for text coming from VMS and uses XON/XOFF protocol with VMS to manage the buffer.

11-611. An RT-11 Device Driver for the DR11W, February 1983.

This is a device Driver in standard RT-11 Device driver format, which implements a sophisticated communications protocol, between two PDP-11 computers. Multiple logical links are possible at the same time, even though the DR11W is a half-duplex device. The driver is capable of recovering from time-outs, and hardware problems on the other side.

11-614. A Debug Driver for RT-11 V4, March 1983.

DB provides identical capabilities as DEC's standard RSX-11 ODT, with a number of powerful extras. There are no syntax changes, and the new features follow the ODT-style format. The biggest feature is that DB is not linked with the application program, but loaded in as a driver. This offers several benefits relative to system access, ease of use, etc. As a driver, DB is in a privileged state, and can access any memory in the system with little trouble. Since DB is activated by doing a .LOOKUP, this code can be left in the application with little memory penalty, and the debugger can be selected simply by loading or not loading the driver.

N. A. Bourgeois, Jr.
NAB Software Services, Inc.
PO Box 20009
Albuquerque, NM 87154

DECUS Library Layered Products Panel for RT-11
Fall 1983 DECUS Symposium
Las Vegas, NV

The DECUS Program Library contains many programming languages that are available to the RT-11 user. These languages are briefly described and their DECUS order numbers are identified below.

ALGEB A language for doing computational algebra and number theory. It is a block-structured recursive language in the ALGOL-PASCAL family. Matrix and vector manipulation features, array-type procedures, and operations with integers of essentially unlimited ted size are provided, floating-point operations are not.

11-475 Version, Apr-81.

ALGOL An Implementation of ALGOL-60. All statement components are supported as well as some extensions. Integer and boolean data types are supported, including one and two dimensional arrays. No floating-point support is provided. Compiler and runtime system included.

11-231 Version, Mar-76.

APL A mathematically structured programming language interpreter, that features many functions which operate on arrays of arbitrary order. Used as a general data-processing language as well as a mathematical tool. Can define recursive procedures that use local variables. Reference Manual not on magnetic media.

11-SP-53 Version 1, RT SIG Tape, Spring 83.
11-631 Version 1, May-83.
11-476 Version 2, Jun-81.

C DECUS C is a general purpose programming language which features economy of expression, modern control flow and data structures, and a rich set of operators. C is not a "very high level" language, nor a "big" one. The entire language is supported, including floating-point.

11-SP-17 RT Subset, RT SIG Tape, Fall 80.
11-SP-18 Master Release Jul-83.
11-SP-26 RT Subset, RT SIG Tape, Spring 81.
11-SP-27 RT Subset, Canadian RT Tape, Fall 81.
11-SP-29 RT Subset, Canadian RT Tape, Spring 82.
11-SP-32 RT Subset, RT SIG Tape, Spring 82.
11-513 RT Subset, Jan-82.

CALC An interpreter that accepts BASIC-like statements and performs computations with as many decimal digits as the user wishes, limited only by the memory size. A programming feature is implemented using files with program size limited by the file space. Fundamental trig and log functions are included.

11-369 Version, Mar-79.

FLECS A FORTRAN Language Extended Control Structures preprocessor. It produces output suitable for input to the FORTRAN IV compiler.

11-SP-27 Canadian RT Tape, Fall 81.
11-SP-29 Canadian RT Tape, Spring 82.
11-SP-30 RT SIG Tape, Fall 81.

FOCAL An interpreter that allows calculations and operations to be performed immediately in response to a user command. The user may also string commands together to form programs. A complete set of statements to perform arithmetic operations, program control, and I/O operations is provided.

11-447 Version 1, Jan-76.

FORTH A high level structured language using reverse Polish notation. The system contains an incremental compiler,

an assembler, and a text editor. Applications packages are included for an extended text editor and floating-point mathematics. Manual is not on the magnetic media.

11-232 Version, Oct-78.

LISP11 An implementation of 125 LISP functions. Provision to conditionally assemble out as many as 60 functions in order to maximise free space.

11-304 Version, Jan-77.
11-SP-27 Canadian RT Tape, Fall 81.
11-SP-29 Canadian RT Tape, Spring 82.

MACSP A set of MACRO-11 macros which provides a concise, comprehensive set of control structures for assembler programs. The facilities provided are: IF...ELSE...FI, LOOP...REPEAT, CASE...CASEND, PROC...END, and CALL.

11-339 Version, Oct-77.

PASCAL NBS PASCAL implementation that assumes an FIS instruction set. Written in PASCAL and generates .OBJ code. Utilities include a character string function package, cross reference programs, and source file maintenance programs, all written in PASCAL.

11-SP-7 Version 1.6c, PASCAL SIG Tape, Fall 79.
11-SP-16 Version 1.6e, PASCAL SIG Tape, Spring 80.

PEP An interpreter based programming system based on an ALGOL-like language. The language has structured statements and procedures with local variables and value and/or reference parameters. Available data types are integer, real boolean, character, and multi-dimensional arrays of these types.

11-531 Version, Dec-81.

RATFOR FORTRAN preprocessor program presented is "Software Tools" by Kernigan and Plauger of Bell Labs. Produces output suitable for input to the FORTRAN IV compiler.

11-SP-13 RT SIG Tape, Spring 80.
11-SP-17 RT SIG Tape, Fall 80.
11-SP-27 Canadian RT Tape, Fall 81.
11-SP-29 Canadian RT Tape, Spring 82.

SPAL-11 A set of macros which gives the ability to write well constructed, clear, and maintainable assembly language programs. It makes use of the MACRO-11 assembler and where possible the code generated has been optimized.

11-606 Version, Dec-82.

Stage-2 A general purpose macro processor designed to port software written for abstract machines. The processor is itself portable being written for an abstract machine called "FLUB".

11-307 Version, Sep-76.

TECO This is a powerful Text Editor and COrrector. It has most of the facilities found in programming languages, such as arithmetic, loops, conditional execution, goto's, an etc., allowing the user to write editing programs that alphabetize lists, reformat tables, renumber statement labels, and much more.

11-288	Version 28, Dec-77.
11-350	Version 28 Manual, Nov-77.
11-SP-32	Version 36, RT SIG Tape, Spring 82.
11-450	Version 36 Manual, May-80.

VLISP A complete LISP programming enviornment. The interpreter implements 160 functions including several I/O functions to provide access to RT-11 files. The package includes a pretty-printer, a save utility, a list oriented editor, a debugger, a file transfer utility, and an infinite precision floating-point point package.

11-617	Version, Sep-82.

XLISP An experimental programming language combining some of the features of LISP with an object oriented extension capability.

11-626	Version 1.1, Apr-83.

SYMPOSIUM TAPE INFORMATION

```
**************************************************************
*                                                            *
*               Fall, 1983 DECUS Symposium RT-11 Tape        *
*                                                            *
*                          Las Vegas, NV                     *
*                                                            *
*                       Annotated Directory                  *
*                                                            *
**************************************************************
*                                                            *
*                          IMPORTANT                         *
*                                                            *
*               Read the file, README.1ST, first.            *
*                                                            *
**************************************************************
```

David Stagg
Dept of Pharmacology
Yale University Medical School
333 Cedar Street
New Haven, CT 06510
(203) 436-2151

This is a subdevice handler (for RT-11, Version 4) necessary to retrieve the .DEV files on this tape. See README.1ST for an explanation and instructions.

```
README.1ST      7  02-Nov-83  SIG tape copy instructions
XD    .SYS      2  05-May-81  SJ/FB driver
XDATCH.SAV     21  17-Apr-81  XDATCH utility
DUP   .SXD     41  21-Sep-81  DUP V4.0K patched for XD
```

```
XD      .DOC     10  16-Nov-81  Description document
XDX     .SYS      2  05-Apr-81  XM driver
DUP     .COM      1  16-Mar-82  Patch file for V4 DUP.SAV

XD      .DEV     55  06-Apr-83  VIRTUAL DEVICE for rebuilding XD,
                                   if necessary.
```

****

VIRTUL.BAS - Subdevice retriever for RSTS.

E.F.Beadel, Jr., Manager
CAUSE Instructional Computer Center
SUNY at Oswego
Oswego, NY 13126
(315) 341-3055

This program allows RSTS/E users to break down the subdevice files from this tape after they have been copied to disk. See README.1ST for details.

****

DIR2.DEV - Annotated tape directories, part 2.

N. A. Bourgeois, Jr.
Sandia National Laboratories
Division 5238
P. O. Box 5800
Albuquerque, NM 87185
(505) 844-8088

R. W. Barnard
Sandia National Laboratories
Division 2565A
P. O. Box 5800
Albuquerque, NM 87185
(505) 844-5115

Annotated directories of the DECUS Symposia RT-11 tapes from the Fall of 1981 through the Fall of 1983 (this symposium). Previous tapes have DIR1.DEV, which contains annotated directories from Spring 1978 through Spring 1981.

```
 Volume ID: TAPE DIR  2
 Owner    : RT-11 SIG
F81    .DIR     55  21-Dec-81      S82    .DIR     28  08-Dec-82
F82    .DIR     18  05-Apr-83      S83    .DIR     44  14-Jun-83
F83    .DIR     61  07-Nov-83
 5 Files, 206 Blocks
```

****

UCL.DEV - User Command Language (UCL) Program.

William K. Walker
Monsanto Research Corp.
P. O. Box 32   OS-123
Maimisburg, OH 45342
(513) 865-3557

This is a somewhat preliminary version of a UCL (User Command Linkage) program under V5 of RT-11. UCL understands two types of commands: "hard-wired" commands, which are installed by modifying the UCL source code, and "symbols", which are commands that you define (or modify or delete) from the console. Symbols are defined by entering a "symbol definition string" in the format: symbol==definition.

```
 Volume ID: UCL.DEV
 Owner    : RT-11 SIG
UCL    .DOC     16  21-Oct-83      README.1ST      2  21-Oct-83
```

```
UCL    .SAV     15  20-Oct-83       PSHPOP.MAC      2  20-Oct-83
UCL    .MAC     64  20-Oct-83       UCLTBL.MAC      3  18-Oct-83
UCLHWC.MAC      32  20-Oct-83       CEX    .MAC    16  20-Oct-83
 8 Files, 150 Blocks
```

****

HEXFIL.DEV - ASCII to hex transformation.

E.F.Beadel, Jr., Manager
CAUSE Instructional Computer Center
SUNY at Oswego
Oswego, NY 13126
(315) 341-3055

The program "TOHEX" converts ANY disk file to a file of hexidecimal characters replete with lines and line numbers. This ASCII hex file can then be transmitted from one computer to another over normal terminal transmission lines. The sister program, "TOBIN", will take the ASCII hex file created by the program "TOHEX" and reconstruct the original file. Therefor, these two programs afford a method of transmitting ANY file between two computers over ASCII transmission lines.

```
 Volume ID: HEXFIL.DEV
 Owner    : RT-11 SIG
BICB   .MAC      3  16-Oct-83       UNHEX .MAC      4  16-Oct-83
BICB   .OBJ      1  16-Oct-83       UNHEX .OBJ      1  16-Oct-83
BICB   .LST      5  16-Oct-83       UNHEX .LST      7  16-Oct-83
README.1ST       7  16-Oct-83       TOHEX .FOR      8  26-Oct-83
TOHEX  .OBJ     19  26-Oct-83       TOHEX .MAP     10  26-Oct-83
TOBIN  .FOR      4  26-Oct-83       TOHEX .LST     15  26-Oct-83
TOHEX  .SAV     23  26-Oct-83       TOBIN .OBJ      9  26-Oct-83
TOBIN  .MAP      9  26-Oct-83       TOBIN .LST      8  26-Oct-83
TOBIN  .SAV     25  26-Oct-83
 17 Files, 158 Blocks
```

****

DSKLIB.DEV - Librarian for multiple disks.

Joel Berez
Infocom
64 Jacqueline Rd.
Waltham, MA 02154
(617) 492-1031

Disk Librarian (DSKLIB) is a program to maintain a master catalog of multiple disk directories. Disks are given unique numbers and names, and then placed in the master catalog. A powerful Find command is then used to locate a particular file. Full wildcards and multiple switches are supported. The Archive Handler was submitted to the RT11 tape previously. It is a sub-device handler that allows a file on a large disk to appear as a directory structured device to RT-11.

```
 Volume ID: DSKLIB.DEV
 Owner    : RT-11 SIG
DSKLIB.DOC    124  08-May-83       DLBOFT.MAC      4  26-Dec-81
DSKLIB.EOB     60  18-May-83       DSKLIB.NOB     62  18-May-83
DSKLIB.NSV     29  18-May-83       DSKLIB.ESV     28  18-May-83
DLBCOM.MAC      1  08-May-83       DLBCOM.SAV      1  15-Mar-79
UA     .MAC     1  08-May-83       UA     .SAV     1  18-May-83
ARV4   .MAC     7  27-Nov-81       ARCDEF.MAC      4  27-Nov-81
```

```
  ARCDEF.SAV      3  27-May-81       AR     .MAC      7  20-Jul-83
  README.DLB      3  14-Oct-83       AR     .DOC     13  14-Oct-83
   16 Files, 348 Blocks
  ************************************************************
```

MISC.DEV - Miscellaneous files.

N. A. Bourgeois, Jr. / 5238
Sandia National Laboratories
PO Box 5800
Albuquerque, NM 87185
(505) 844-8088

ACODE.*, GREP, README.ACO

This is a list of telephone area codes. The list is in numeric sequence by area code and includes as yet unassigned codes. Under TSX-Plus the command file ACODE.COM may be used for online query of the ACODES.TXT file. The file GREP.SAV is from the DECUS C distribution and performs the search of the ACODES.TXT file.

RTLANG.*

The file RTLANG.ABS contains a list of the programming languages available from the DECUS Program Library and their order numbers.
****

R. W. Barnard
Sandia National Laboratories
Division 2565A
PO Box 5800
Albuquerque, NM 87185
(505) 844-5115

SATTRN.*, PARSE, README.SAT

This program allows the transfer of files written with the WP-SATURN word processing system to be transferred to and from RT-11 and RSX (or VMS) systems.
****

Russell L. Morrison II
Systems Analyst, Software Support
Plessey Peripheral Systems
P.O. Box 19616
Irvine, CA 92714

IND*.*, README.IND, README.VFY

This is the documentation on how to use IND.SAV from RT-11 Version 4, AUTOPATCH Revision D, patched as needed for use under Version 4.
****

Larry Owens
OWENS COMPUTER SERVICES
2813 Indianola Avenue
Columbus, OH 43202
(614) 262-4805

VFY.*, README.VFY

VFY is a random-access (disk) verification utility. It allows a user file to verify that a certain disk is loaded in a specified drive.
****

Bruce D. Sidlinger
Vice President - Res. & Eng.
Alcor Inc.
10130 Jones-Maltsberger
San Antonio, TX 78284
(512) 349-3771

BRUCE.*, README.BRU

BRUCE copies all of the files from a disk onto another (scratch) disk or tape of equal or larger capacity. The files appear on the output device in EXT, FILNAM sorted order. If there were no errors, BRUCE then initializes the input disk and copies the files back. The result is a "squeezed" disk with all of the .SYS files adjacent and with a "neat-looking" (unsorted) directory.
****

Thomas J. Shinal
Vice-President
General Scientific Corporation
1684 East Gude Drive
Rockville, MD 20850
(301) 340-2773

WATCH.*, ASCBIN, TIMDIF, DATE, CVT10, DOG, README.WAT

WATCH is a program which will run as a Detached Job under TSX+ to execute up to 32 command files in a time sequential order starting at 00:01 hours. A date may be associated with each command line. Any part of the date field may be wild carded.

```
 Volume ID: MISC.DEV
 Owner    : RT-11 SIG
README.ACO      3  14-Oct-83      ACODES.TXT      6  20-Sep-83
ACODE .COM      1  31-Mar-82      GREP  .SAV     25  12-May-82
RTLANG.ABS      5  14-Oct-83      RTLANG.RNO     15  14-Oct-83
RTLANG.DOC     18  14-Oct-83      README.SAT      1  01-Nov-83
SATTRN.FOR      7  11-Jul-83      SATTRN.SAV     29  11-Jul-83
SATTRN.DOC      8  14-Oct-83      PARSE .OBJ     15  31-Aug-83
INDCOM.DOC    153  02-Feb-83      IND   .JMC     40  21-Sep-81
README.IND      3  16-May-83      VFY   .SAV      5  20-Jun-83
VFY   .MAC     35  20-Jun-83      VFY   .DOC     10  20-Jun-83

README.VFY      5  20-Jun-83      BRUCE .ABS      2  25-Oct-83
BRUCE .COM      8  25-Oct-83      BRUCE .LST      7  25-Oct-83
README.BRU      3  25-Oct-83      WATCH .COM      1  05-Sep-82
WATCH .OBJ      3  03-Oct-82      WATCH .SAV      6  03-Oct-82
ASCBIN.OBJ      1  05-Sep-82      TIMDIF.OBJ      1  05-Sep-82
CVT10 .OBJ      1  05-Sep-82      DATE  .OBJ      1  05-Sep-82
DOG   .COM      1  05-Sep-82      CVT10 .MAC      2  18-Oct-83
DATE  .MAC      4  18-Oct-83      WATCH .MAC     14  18-Oct-83
ASCBIN.MAC      3  18-Oct-83      TIMDIF.MAC      5  18-Oct-83
README.WAT      2  26-Oct-83
 37 Files, 449 Blocks
```

****

FOROTS.DEV - Description of the RT-11 FORTRAN OTS.

Robert Abramson
Digital Equipment Corp.
110 Spit Brook Road
Nashua, NH 03061

This is a summary description of PDP-11 FORTRAN OTS. It was originally given in the Fall, 1980, tape, and is being repeated by popular demand.

```
 Volume ID: FOROTS.DEV
 Owner    : RT-11 SIG
README.DAT      1  05-Nov-80       F4OTS .DOC    439  05-Nov-80
 2 Files, 440 Blocks
```

****

UTILS.DEV - Directory utilites, and other things.

Glenn A. Bever
NASA Ames/Dryden Flight Research Facility
Code OFEM
P.O. Box 273
Edwards, CA 93523
(805) 258-3311

BNSRCH.*, HEX.*, IAND.*, IHEXBN.*, IOR.*, IRAM.*, IRVRS.*, IXOR.*, MOD.*, PRH.*, PROPDP.*, PROTEK.*, RTDIR.*, TEKPRO.*, XDATCH.*, README.DIR

A collection of utilities and programs. Some of them relate to use with TEKTRONIX development systems and PROLOG prom programmers. 'XDATCH' has been modified to allow a complete list of XDn assignments. 'PRH' is a print utility (date/time stamped headers). 'RTDIR' searches an RT-11 volume and its subdevices for specified filenames.

****

Dan Kingsbury
GABA, Inc.
15010 Ventura Blvd., Suite 304
Sherman Oaks, CA 91403
(213) 907-6622

*.COM, README.PAT

These are several command files for use with TSX+ and RT-11. Included are patches for V4 and V5 DIR.SAV that force display of volume ID and owner without having to use the /VOL switch. Also, a patch to V4 PIP that will cause logging (i.e., "Files Copied...") to display the input file size and creation date.

```
 Volume ID: UTILS.DEV
 Owner    : RT-11 SIG
README.DIR      6  22-Oct-83       BNSRCH.FOR      6  20-Nov-81
BNSRCH.SAV     19  20-Nov-81       HEX    .FOR     3  13-Mar-80
HEX    .OBJ     7  01-Sep-83       IHEXBN.FOR      2  26-Jul-79
IHEXBN.OBJ      6  31-Aug-83       IRAM   .MAC     5  13-Jul-79
IAND   .MAC     2  26-Jul-79       IOR    .MAC     1  26-Jul-79
IXOR   .MAC     2  26-Jul-79       IRVRS  .MAC     2  10-Sep-79
MOD    .FOR     5  18-Nov-82       MOD    .SAV    19  18-Nov-82
PROPDP.FOR      3  10-Dec-80       PROPDP.SAV     25  10-Dec-80
PROTEK.FOR      8  16-Jan-80       PROTEK.SAV     21  16-Jan-80
```

```
RTDIR .SAV     29  22-Oct-83      RTDIR .FOR     21  22-Oct-83
PRH   .FOR      5  04-Apr-83      PRH   .SAV     20  05-Apr-83
XDATCH.FOR     10  03-Jan-83      PIPPCH.COM      6  06-Jun-83
PIPNAM.COM      1  05-Apr-82      DIRID4.COM      2  25-Oct-83
DIRID5.COM      2  25-Oct-83      EXTEND.COM      1  24-Sep-82
WIDE  .COM      1  25-Oct-83      README.PAT      1  31-Oct-83
 30 Files, 241 Blocks
**************************************************************
```

DATFIT.DEV - Routines for data analysis and fitting.

Robert Walraven
University of California
Davis, CA 95616
(916) 752-0360

These are a collection of routines for fitting data. This submittal contains three sections:

1. Equation fitting routines.
2. Digital filter routines.
3. 1st order differential equation solvers.

```
 Volume ID: DATFIT.DEV
 Owner    : RT-11 SIG
README.1ST      4  22-Oct-83      LINFIT.FOR      7  19-Oct-83
NLFIT .FOR     12  22-Oct-83      MATINV.FOR      8  18-Oct-83
FPOLY .FOR      1  19-Oct-83      FCHISQ.FOR      1  22-Oct-83
FEXP  .FOR      2  22-Oct-83      DFEXP .FOR      2  22-Oct-83
EXPFIT.FOR      5  22-Oct-83      EXPGEN.FOR      4  22-Oct-83
FLTLIB.FOR     28  06-Oct-80      FLTREC.FOR      6  11-Apr-82
FLTPLT.FOR      4  29-Sep-80      ADBASH.FOR      5  09-Oct-81
KUTSIM.FOR      3  09-Oct-81      TESTAB.FOR     15  27-Oct-81
TESTKS.FOR      3  09-Oct-81
 17 Files, 110 Blocks
**************************************************************
```

SUPMAC.DV1
SUPMAC.DV2
SUPMAC.DV3
SUPMAC.DV4 - Structured MACRO preprocessor.

Edward F. Beadel, Jr.
Manager
Instructional Comp. Ctr.
Snygg Hall
SUNY at Oswego
Oswego, NY 13126
(315) 341-3305

SUPMAC is a preprocessor for the structured asembler language SUPER MAC which is written in FORTRAN IV. The file also contains the command files SUPFOR.CMD to compile the sources, and SUPLNK to link the SUPER MAC compiler, togeather with SEG.OBJ and ESTUFF.OBJ which were compiled with an earlier SUPMAC compiler. Some test programs are also included.

```
 Volume ID: SUPMAC.DV1
 Owner    : RT-11 SIG
README.1ST     17  31-Oct-83      COP   .RNO      5  31-Oct-83
SUPDLK.CMD      1  31-Oct-83      SUPCOM.CMD      1  31-Oct-83
SUPLNK.CMD      1  31-Oct-83      SUPFOR.CMD      2  31-Oct-83
SORT  .MAP      2  31-Oct-83      README.2ND      9  31-Oct-83
```

```
COP    .DOC      7  31-Oct-83        SUPER .DOC     57  31-Oct-83
README.RNO     12  31-Oct-83        CHAINT.LST      9  31-Oct-83
TT     .LST    28  31-Oct-83        IOX    .LST    95  31-Oct-83
SORT   .LST    19  31-Oct-83        ESTUFF.LST      6  31-Oct-83
SEG    .LST     9  31-Oct-83        T      .TEC     4  31-Oct-83
SUPMAC.MAP     26  31-Oct-83        LIFE   .MAC    27  31-Oct-83
SORT   .MAC    10  31-Oct-83        CHAINT.MAC      8  31-Oct-83
COP    .M       7  31-Oct-83        IOX    .MAC    36  31-Oct-83
ESTUFF.MAC      6  31-Oct-83        SEG    .MAC     8  31-Oct-83
CHAINT.SMA      2  31-Oct-83        SORT   .SMA     3  31-Oct-83
LIFE   .SMA     7  31-Oct-83        FRED   .SMA     8  31-Oct-83
CHAINP.SMA      3  31-Oct-83        ESTUFF.SMA      1  31-Oct-83
SEG    .SMA     3  31-Oct-83
 33 Files, 439 Blocks

 Volume ID: SUPMAC.DV2
 Owner    : RT-11 SIG
CHAINT.OBJ      1  31-Oct-83        REVBLK.OBJ      5  31-Oct-83
FLCOPY.OBJ      7  31-Oct-83        EXNAME.OBJ      6  31-Oct-83
CHECKF.OBJ      5  31-Oct-83        COMPRS.OBJ      6  31-Oct-83
DEFINE.OBJ     13  31-Oct-83        INCLUD.OBJ      7  31-Oct-83
SUPDIR.OBJ      8  31-Oct-83        MERGE .OBJ      6  31-Oct-83
INIT   .OBJ     9  31-Oct-83        ESTUFF.OBJ      1  31-Oct-83
SEG    .OBJ     1  31-Oct-83        WRAPUP.OBJ      7  31-Oct-83
WHILE  .OBJ     5  31-Oct-83        VAL    .OBJ     4  31-Oct-83
UTILTY.OBJ     12  31-Oct-83        UTIL   .OBJ    10  31-Oct-83
UNTIL  .OBJ     5  31-Oct-83        THRU   .OBJ     6  31-Oct-83
THROUT.OBJ      4  31-Oct-83        SUBCOT.OBJ      4  31-Oct-83
STR    .OBJ     5  31-Oct-83        REVLAB.OBJ      7  31-Oct-83
REVCOM.OBJ      5  31-Oct-83        RETURN.OBJ      5  31-Oct-83
REPEAT.OBJ      5  31-Oct-83        REGSER.OBJ      4  31-Oct-83
REGFET.OBJ      4  31-Oct-83        PUSH   .OBJ     5  31-Oct-83
PROCED.OBJ      6  31-Oct-83        PROBE  .OBJ     5  31-Oct-83
POP    .OBJ     5  31-Oct-83        PARSER.OBJ      5  31-Oct-83
OUTPUT.OBJ      6  31-Oct-83        ONERR  .OBJ     4  31-Oct-83
NOERR  .OBJ     4  31-Oct-83        MULBLK.OBJ      4  31-Oct-83
MACRO  .OBJ     4  31-Oct-83        LOOPS  .OBJ    11  31-Oct-83
LOOP   .OBJ     5  31-Oct-83        LET    .OBJ    21  31-Oct-83
LENGTH.OBJ      4  31-Oct-83        LEAVE  .OBJ     5  31-Oct-83
LABGEN.OBJ      4  31-Oct-83        KEYWRD.OBJ      4  31-Oct-83
INOP   .OBJ     4  31-Oct-83        INIMAC.OBJ     17  31-Oct-83
ILMATH.OBJ      4  31-Oct-83        ILLCHR.OBJ      5  31-Oct-83
IFTHEN.OBJ      4  31-Oct-83        GOTO   .OBJ     4  31-Oct-83
FORGEN.OBJ      5  31-Oct-83        FI     .OBJ     5  31-Oct-83
EXTNAM.OBJ      4  31-Oct-83        ERROR  .OBJ     4  31-Oct-83
ENDM   .OBJ     4  31-Oct-83        ENDD   .OBJ    14  31-Oct-83
ELSE   .OBJ     5  31-Oct-83        CHECK  .OBJ     4  31-Oct-83
CASE   .OBJ     8  31-Oct-83        CALL   .OBJ    11  31-Oct-83
BEGIN  .OBJ     5  31-Oct-83        SUPMAC.OBJ     15  31-Oct-83
IOX    .OBJ     5  31-Oct-83
 65 Files, 396 Blocks

 Volume ID: SUPMAC.DV3
 Owner    : RT-11 SIG
WRAPUP.FOR     12  31-Oct-83        WHILE  .FOR    11  31-Oct-83
VAL    .FOR     8  31-Oct-83        UTILTY.FOR     15  31-Oct-83
UTIL   .FOR    14  31-Oct-83        UNTIL  .FOR    11  31-Oct-83
THRU   .FOR    11  31-Oct-83        THROUT.FOR     10  31-Oct-83
SUPDIR.FOR     12  31-Oct-83        SUBCOT.FOR     10  31-Oct-83
STR    .FOR     8  31-Oct-83        REVLAB.FOR     14  31-Oct-83
```

```
REVCOM.FOR     11  31-Oct-83      REVBLK.FOR      8  31-Oct-83
RETURN.FOR     11  31-Oct-83      REPEAT.FOR     11  31-Oct-83
REGSER.FOR     10  31-Oct-83      REGFET.FOR     10  31-Oct-83
PUSH  .FOR     11  31-Oct-83      PROCED.FOR     12  31-Oct-83
PROBE .FOR     11  31-Oct-83      POP   .FOR     11  31-Oct-83
PARSER.FOR     11  31-Oct-83      OUTPUT.FOR     11  31-Oct-83
ONERR .FOR     11  31-Oct-83      NOERR .FOR     11  31-Oct-83
MULBLK.FOR     10  31-Oct-83      MERGE .FOR      9  31-Oct-83
MACRO .FOR     10  31-Oct-83      LOOPS .FOR     14  31-Oct-83
LOOP  .FOR     11  31-Oct-83      LET   .FOR     19  31-Oct-83
LENGTH.FOR      8  31-Oct-83      LEAVE .FOR     11  31-Oct-83
LABGEN.FOR     10  31-Oct-83      KEYWRD.FOR     10  31-Oct-83
INOP  .FOR     10  31-Oct-83      INIT  .FOR     13  31-Oct-83
INIMAC.FOR     16  31-Oct-83      INCLUD.FOR     12  31-Oct-83
ILMATH.FOR     10  31-Oct-83      ILLCHR.FOR     11  31-Oct-83
IFTHEN.FOR     10  31-Oct-83
 43 Files, 480 Blocks

 Volume ID: SUPMAC.DV4
 Owner    : RT-11 SIG
GOTO  .FOR     10  31-Oct-83      FORGEN.FOR     11  31-Oct-83
FLCOPY.FOR     10  31-Oct-83      FI    .FOR     11  31-Oct-83
EXTNAM.FOR      8  31-Oct-83      EXNAME.FOR      9  31-Oct-83
ERROR .FOR     10  31-Oct-83      ENDM  .FOR     11  31-Oct-83
ENDD  .FOR     16  31-Oct-83      ELSE  .FOR     11  31-Oct-83
DEFINE.FOR     15  31-Oct-83      COMPRS.FOR     11  31-Oct-83

CASE  .FOR     13  31-Oct-83      CALL  .FOR     14  31-Oct-83
BEGIN .FOR     10  31-Oct-83      SUPMAC.FOR     23  31-Oct-83
CHECKF.FOR      2  31-Oct-83      CHECK .FOR      3  31-Oct-83
SUPDIR.SAV     37  31-Oct-83      SUPMAC.SAV    116  31-Oct-83
COF   .F        7  31-Oct-83      SORT  .SAV      7  31-Oct-83
 22 Files, 365 Blocks
**************************************************************
```

HGRAPH.DV1
HGRAPH.DV2
HGRAPH.DV3 - Plotting Package for RT-11.

Dennis V. Jensen
Ames Laboratory ISU/USDOE
310 Metallurgy
Ames, IA 50011
(515) 294-4823

HGRAPH is a plotting package which will generate two- or three-dimensional graphs on a Visual 550 graphics terminal (Tektronix 4014 compatable) or on a Bausch and Lomb (Houston Instruments) DMPL plotter. The package is written in RT-11 FORTRAN using version 2.5 and is also being used on the VAX under VMS FORTRAN-77 without modifications to the source code. The graphics terminal support uses Tektronix 4014 compatability for graphics and also uses the extended character generator of the V550.

```
 Volume ID: HGRAPH.DV1
 Owner    : RT-11 SIG
README.1ST      8  21-Oct-83      HIPLOT.FOR     16  21-Oct-83
VIPLOT.FOR     16  21-Oct-83      VIX   .COM      1  21-Oct-83
HIX   .COM      1  21-Oct-83      CCPLOT.DOC     24  21-Oct-83
CCPLOT.RNO     19  21-Oct-83      HICOMP.COM      3  21-Oct-83
CCLIB .COM      1  21-Oct-83      AXIS  .FOR      8  21-Oct-83
SCALE2.FOR      3  21-Oct-83      SETGRF.FOR      7  21-Oct-83
ENDPLT.FOR      2  21-Oct-83      LGXTST.FOR      1  21-Oct-83
```

```
PLTREL.FOR      1  21-Oct-83       PLTABS.FOR      1  21-Oct-83
PLOT  .FOR      6  21-Oct-83       INIPLT.FOR      3  21-Oct-83
PENDWN.FOR      1  21-Oct-83       PENUP .FOR      1  21-Oct-83
NEWPEN.FOR      2  21-Oct-83       MARKER.FOR      1  21-Oct-83
LINTYP.FOR      1  21-Oct-83       PLTX  .FOR      4  21-Oct-83
SYMTST.FOR      1  21-Oct-83       SYMBOL.FOR      6  21-Oct-83
SCALE .FOR      4  21-Oct-83       LOGAX .FOR      7  21-Oct-83
ICONV .FOR      3  21-Oct-83       SCALOG.FOR      3  21-Oct-83
AXTEST.FOR      1  21-Oct-83       ALFTST.FOR      2  21-Oct-83
PLTOUT.FOR      6  21-Oct-83       HGRAPH.FOR     55  21-Oct-83
 34 Files, 219 Blocks

 Volume ID: HGRAPH.DV2
 Owner    : RT-11 SIG
HGRAPH.RNO    207  21-Oct-83       HGRAPH.DOC    236  21-Oct-83
 2 Files, 443 Blocks

 Volume ID: HGRAPH.DV3
 Owner    : RT-11 SIG
HGRAPH.SAN    438  21-Oct-83
 1 Files, 438 Blocks
**********************************************************

DECUSC.DEV - The DECUS C distribution for RT-11.
501A  .DEV      501B  .DEV      501C  .DEV      501D  .DEV
501E  .DEV      501F  .DEV      501G  .DEV      501H  .DEV
501I  .DEV
502   .DEV
503A  .DEV      503B  .DEV      503C  .DEV      503D  .DEV
504   .DEV
505A  .DEV      505B  .DEV
601A  .DEV      601B  .DEV      601C  .DEV
602A  .DEV      602B  .DEV      602C  .DEV      602D  .DEV
602E  .DEV
603A  .DEV      603B  .DEV
604   .DEV
605   .DEV
606   .DEV
C1    .DEV
C2    .DEV
C3    .DEV
```

Thomas J. Shinal (Submitter)
Vice-President
General Scientific Corporation
1684 East Gude Drive
Rockville, MD 20850
(301) 340-2773

This is an extract of the complete DECUS C distribution (11-SP-18, master release, update of July, 1983), appropriate for RT-11. The contents of the individual subdevices are not listed here, but the file README.C in the subdevice file DECUSC.DEV contains a listing of what each of the subdevices contains. Additionally, the file KIT.DOC in that subdevice has installation instructions. Listed below is a directory of the subdevice files, to provide an idea of how much space to allow for recovery of the C distribution. The files C*.DEV are a pre-built C system.

```
C1      .DEV    484  03-Nov-83       503D  .DEV     92  04-Nov-83
C2      .DEV    471  03-Nov-83       504   .DEV    396  04-Nov-83
C3      .DEV    183  03-Nov-83       505A  .DEV    494  13-Oct-83
DECUSC.DEV      87  01-Nov-83       505B  .DEV    420  04-Nov-83
```

```
501A   .DEV    494   13-Oct-83        601A   .DEV    459   04-Nov-83
501B   .DEV    494   13-Oct-83        601B   .DEV    494   13-Oct-83
501C   .DEV    217   03-Nov-83        601C   .DEV    152   04-Nov-83
501D   .DEV    485   03-Nov-83        602A   .DEV    467   04-Nov-83
501E   .DEV    467   04-Nov-83        602B   .DEV    494   13-Oct-83
501F   .DEV    494   13-Oct-83        602C   .DEV    494   13-Oct-83
501G   .DEV    440   04-Nov-83        602D   .DEV    467   04-Nov-83
501H   .DEV    480   04-Nov-83        602E   .DEV    273   04-Nov-83
501I   .DEV    463   04-Nov-83        603A   .DEV    454   04-Nov-83
502    .DEV    407   04-Nov-83        603B   .DEV    430   04-Nov-83

503A   .DEV    485   04-Nov-83        604    .DEV    436   04-Nov-83
503B   .DEV    494   13-Oct-83        605    .DEV    231   03-Nov-83
503C   .DEV    494   13-Oct-83        606    .DEV    321   03-Nov-83
 34 Files, 13713 Blocks
**********************************************************************

The entire tape contains 59 Files, 19310 Blocks
```

NOTE: The files listed after a submitter's name in a subdevice are all the ones associated with that submission. RT-11 explicit (*) and implicit (no extension) wildcarding has been used.

This tape prepared by
R. W. Barnard
4-November-1983.

RT-11 SIG TAPE DISTRIBUTION TREE

Responsibility for the SIG tape has now been divided into two parts - R. W. Barnard makes the tape, and Tom Shinal maintains the distribution tree.

This means that if you want to get a copy of a RT-11 SIG tape, you should contact your local LUG librarian. If he doesn't have a copy, he should contact Tom Shinal to find out who the nearby tree person is, and to perhaps volunteer to become a part of the distribution tree. Eventually, your LUG librarian will get the tape you desire.

Tom Shinal, Vice-President
General Scientific Corporation
1684 East Gude Drive
Rockville, MD 20850

If you wish to donate things to the RT-11 SIG tape, you may do so at any time of the year, not just at Spring and Fall Symposium time, (the actual tapes will be made and distributed only at the Symposia, however). This can be done by executing a tape copy release form (a copy of which is included in this newsletter), and sending it and the files to R. W. Barnard, for inclusion in the next SIG tape. Submissions can be sent on RX01, RX02 floppies, or magtape (800 or 1600 bpi). Your media will be returned promptly, if you desire.

R. W. Barnard
Sandia National Laboratories
Division 2565A
P.O. Box 5800
Albuquerque, NM 87185

ATTACHMENT C

DECUS

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Company _____

Address _____

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City _____ State _____ ZIP _____ Telephone _____

Program Name(s) _____

_____

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☐ RSX ☐ STRUCT. LANG. ☐ TOPS-20

Contents of Tape: _____

Number of Files _____ PPN _____

Is this material account specific? _____

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☐ 800 BPI ☐ 1600 BPI ☐ Other _____

Description: _____

_____

_____

Guidelines:

Users who wish to participate in the exchange should bring a 2400 foot (preferably new) quality tape to the Symposium. The tape and cannister should be clearly labeled with the user's name and address.

1. ***No proprietary or licensed software (including whole or partial copies) may be submitted.***
2. Users who would like to submit modifications to licensed DIGITAL software may submit files to be appended to the original source program. ONLY the modifications may be submitted.
3. Users are encouraged to include a README file on their tape including the submitter's name and address, and a description of the files he/she is submitting.
4. Tapes should be compatible with standard system software. Please indicate the number of files and the PPN, UIC or account, and tape format.
5. Tapes should be 9-track, and be labeled with the sender's name and address.

IMPORTANT! RELEASE AGREEMENT ATTACHED

ATTACHMENT D

Release Form Number:

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