PREFACE

The ETOS Release Notes contains information which allows the user
to communicate effectively with QUODATA, in-house personnel and
other users.

TABLE OF CONTENTS

List of Tables

CHAPTER 1
RELEASE NOTES OVERVIEW

1.1 INTRODUCTION

The ETOS Release Notes contain information which allow for effective communication and efficient overall support for your system. These release notes should be read before any other ETOS documentation. The information is applicable to new users and users who are upgrading to ETOS V5B from an earlier version. After this manual is read, new users should read the ETOS V5B Manager's Guide. Upgrading users should read the ETOS Conversion Manual prior to reading the Manager's Guide. Aside from this introductory chapter, the release notes are divided into three areas.

Chapter 2 contains information about QUODATA's policies concerning ETOS. Most of the information contained in this chapter has been previously discussed. This chapter is a collection of this information, including warranty agreements, software license agreements and other policy information.

Chapter 3 contains information about communication with other users. This chapter explains QUODATA's role in stimulating this communication, methods for direct communication via the ETOS users groups and lists of users programs which are of general interest.

Appendix A contains worksheets which allow you to record all pertinent information about your software installation. Each decision, made at the time of installation, has a place to be recorded. Start-up and shut-down procedures can be recorded in a format which can be used by a computer operator. Account information can also be listed.

These worksheets are contained in an appendix, instead of a chapter, because they are used in two ways. New ETOS users record their decisions on the worksheets as they perform installation. Upgrading users record their existing system parameters on the worksheets, using the procedures discussed in the ETOS conversion manual. If an upgrading user is not changing his system layout to any great extent, the worksheets act as an assist to installation and reduce the number of decisions to be made. These decisions are then restricted only to those features in ETOS V5B, which were not contained in V5A.

Both new and upgrading users should make copies of these worksheets in sufficient quantity to meet their needs. The original worksheets in Appendix A should remain blank in case they are needed at some future date to record changes in the system.

CHAPTER 2
QUODATA'S POLICIES

2.1   INTRODUCTION

Chapter 2 contains information about QUODATA's policies concerning ETOS.   Support policies, updating information and license restrictions are contained in this chapter. Most of the information is contained in standard forms, many of which have previously been sent to you.   This chapter is basically a collection of forms, with an explanation of the user of each form.

2.2   SOFTWARE LICENSE AGREEMENT

Prior to shipment of software from QUODATA, two software license agreements are sent to the user. The software license agreement contains information about license restrictions, non-disclosure, original warranty, back-up and legal jurisdiction. Both copies of the agreement must be signed by an authorized individual and returned to QUODATA. The license agreements are examined to insure that no unauthorized changes have been made to the agreement.   After inspection, both copies are signed by an authorized QUODATA employee. One copy of the license is returned to the user for his records. The second copy is retained in QUODATA's customer files.

<your name>   (hereinafter referred to as "CUSTOMER")

<your address>

QUODATA Corporation (hereinafter referred to as "QUODATA") agrees to grant and the CUSTOMER agrees to accept a non-transferable and non-exclusive license to use each of the programs and such related materials and documentation, listed below, (hereinafter singularly and/or collectively referred to as "Licensed Program"), on the following terms and conditions:

1. TERM

    Each License shall be effective from the date hereof and shall remain in force until CUSTOMER discontinues the use of such Licensed Program, or the License is otherwise terminated as provided herein.

2. LICENSE

    CUSTOMER shall have the right to use each Licensed Program or any portion thereof on a single Computer System, (hereinafter referred to as "System"), and for no other purpose. Separate Licenses are required for use of Licensed Program on each additional computer system.

3. RIGHT TO USE

    A.   CUSTOMER may edit, format, or otherwise modify the Licensed Program provided, however, that any portion thereof included in a modified work shall remain subject to all terms and conditions of this License and shall remain the property of QUODATA.

    B.   The CUSTOMER may copy each Licensed Program for the following purposes only:

            to use the Licensed Program on a single system,
            to modify each Licensed Program as provided above,
            to replace a worn or deteriorated copy, and
            for archive or emergency restart purposes.

    C.   The CUSTOMER agrees to reproduce and include the copyright notice on all copies of each Licensed Program, or any modification thereof in any form.

    CUSTOMER's right to copy and/or modify any Licensed Program shall be limited to the conditions set forth in this Paragraph 3.

4. SECURITY

    The Licensed Program constitutes a valuable work product of QUODATA in the form of trade secrets, know-how and confidential information which is the exclusive property of QUODATA. The Licensed Program cannot be

assigned, disclosed, or transferred directly or indirectly to third parties. It is agreed that the Licensed Program will only be used for the purpose of management and control of the CUSTOMER and will not be used as a basis for creating similar Licensed Programs that will be distributed to unlicensed third parties.

The CUSTOMER agrees not to provide or otherwise make available any Licensed Program or any portion thereof, including but not limited to flowcharts, logic diagrams, object codes, source codes, and technical documentation, in any form, to any person other than CUSTOMER or QUODATA employees without the prior written approval of QUODATA.

CUSTOMER shall keep all copies of the Licensed Program at the designated facility, except that copies or portions may be transported or transmitted to a location other than the designated facility for archive storage or emergency restart procedures. CUSTOMER will use best efforts to limit the access to the Licensed Program only to its employess who will respect and acknowledge the trade secrets, know-how and confidential information of QUODATA. CUSTOMER will supervise, manage and control the Licensed Program and the security thereof. Should any portion of the Licensed Program be compromised, CUSTOMER will suitably notify QUODATA of the circumstances surrounding such compromise.

5. TITLE

All right title and interest in and to the Licensed Program shall at all times remain with QUODATA and the customer shall have no other rights except as expressly granted in this license agreement.

6. WARRANTY - LIMITED

A. Any reproducible deviation between the operation of the unaltered Licensed Program on the appropriate Computer System and its documented operation as referenced in the applicable manual to qualify for correction under this warranty, as stated below, must be reported to QUODATA within one year from delivery of the software program. Upon verification of the deviation, QUODATA will suggest a temporary fix or by-pass, if one is available. QUODATA will then undertake its best efforts to rectify the deviation and will make available to the CUSTOMER any resulting corrections. However, QUODATA does not represent or warrant that all or any deviations will be corrected. Software discrepancies are to be reported on Software Performance Report forms supplied by QUODATA.

B. EXCEPT FOR THE EXPRESS WARRANTY STATED ABOVE, QUODATA DISCLAIMS ALL WARRANTIES WITH REGARD TO THE SOFTWARE PROGRAM LICENSED HEREUNDER, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS. Any stated warranties are in lieu of all obligations or liability on the part of QUODATA for damages, including but not limited to special, indirect or consequential damages arising out of or in connection with the use or performance of the software program licensed hereunder.

C.   CUSTOMER is responsible for keeping reasonable backup data for reconstruction of files used by the subject systems. QUODATA is not liable for any effort or expenses required for file reconstruction regardless of the reason for such restoration. In no event will QUODATA be liable for consequential damages even if QUODATA has been advised of the possibility of such damages.

7. UPDATE AND SUPPORT SERVICE

Continued updates and support for one year (including the warranty period) from the date of installation is included in consideration of the terms and conditions of this Agreement. CUSTOMER has the option to renew this service beyond the one year period at the then current rate per year payable at the beginning of each renewal year. Should CUSTOMER omit payment of the annual update and support fee, coverage can be reinstated by payment of all previous annual fees. This service includes:

A.   Review of Software Performance Reports (SPRs) and attempted correction of program errors which can be recreated for observation by QUODATA personnel. QUODATA will respond to SPRs within (30) days of receipt.

B.   New Releases of the basic system including future enhancements which are included as part of the basic system.

C.   QUODATA will continue to insure that its Licensed Programs are kept current with new releases of DEC's operating systems insofar as documentation of the operating system continues to be available.

8. TERMINATION

In the event CUSTOMER neglects or fails to perform or observe any of its obligations under this Agreement, or if any assignment shall be made of its business for the benefit of creditors, or if a receiver, trustee in bankruptcy, or a similar officer shall be appointed to take charge of all or part of its property, or if it is adjudged bankrupt or defunct, the License Agreement and all Licenses granted hereunder as to CUSTOMER shall immediately terminate.

9. CERTIFICATION

Within two (2) weeks after the termination of any License granted hereunder, in accordance with the terms hereof, the CUSTOMER shall certify in writing to QUODATA that through its best efforts and to the best of its knowledge the original and all copies, in any form, in whole or in part, and including partial copies and modifications of the Licensed Program, received from QUODATA or made in connection with the License have been destroyed except as may be authorized in writing by QUODATA.

10. TAXES

The CUSTOMER agrees to comply with and conform to all municipal, State and Federal laws relating to the operation of said Licensed Programs to pay all costs and expenses of every character occasioned by or involving the use or operation of the Licensed Programs and to pay all legal assessments, taxes or public charges either local, municipal, State or Federal which may be levied upon said Licensed Programs during the term of this contract exclusive, however, of taxes based upon the income of Licensor.

11. <u>BACKUP</u>

It is CUSTOMER's responsibility to make sure adequate backup copies exist of the system and the data base created by the system. In the event that these Licensed Programs or files are destroyed either through hardware malfunctioning, misuse, or program errors whether contained in QUODATA systems or other systems, such reconstruction will be the responsibility of the user. If it is necessary or requested that QUODATA assist in this reconstruction, a minimum charge of $250 will be made.

12. <u>ASSIGNMENT</u>

The License Agreement, the Licenses granted hereunder and the Licensed Program may not be assigned, sub-licensed or otherwise transferred by the CUSTOMER without prior written consent from QUODATA. No right to reprint or copy, in whole or in part, the Licensed Program is granted hereby except as otherwise provided herein.

13. <u>QUODATA RIGHTS NOT RESTRICTED</u>

Nothing herein contained shall affect the right of QUODATA to use the Licensed Programs or to grant license to any other person or persons, corporation, or association to use or exercise the Licensed Programs or to assign or sell the same.

14. <u>LEGAL JURISDICTION</u>

This license agreement shall be interpreted according to and governed by the laws of the State of Connecticut.

15. <u>LICENSED PROGRAM(S)</u>

<your programs>

_____

16. The CPU serial number <number>.

Executed this   day of   , 19   .

<u>QUODATA CORPORATION</u>   _____
                                          CUSTOMER

BY:_____   BY:_____
      Duly Authorized   Duly Authorized

TITLE:_____   TITLE:_____

2.3   ETOS CONFIGURATION GUIDE

In addition to the Software License Agreements, two copies of the ETOS Configuration Guide are sent to the user prior to shipment. One copy of the Guide is filled out and retained for the user's files. The second copy is filled out and signed by an authorized individual. The guide is returned to QUODATA for the customer files. The Configuration Guide is used for a number of reasons.

The billing address and shipping address are records, which facilitates shipment of equipment or software from QUODATA. The principal contact is also listed, which is used for all mailings to the customer.

The hardware configuration is recorded. We send out one version of the ETOS monitor to all users. The system is tailored to an individual installation by a configuration program. Even though the user tailors his system, the hardware parameters are important to QUODATA. They allow us to provide better technical support by examining interactions between software and hardware. Often, a problem in the system occurs only for users of a particular piece of hardware. By inspecting the configuration guide, we can check for obvious discrepancies or sources of hardware interaction problems. The hardware parameters also provide the user and QUODATA with the information necessary to determine upgrade possibilities. Information on addtional equipment (e.g., line printer, disk, terminal) which varies from one installation to another, can be helpful in solving your problem.

If you change your hardware configuration after you have run ETOS for a period of time, make a copy of the blank configuration guide contained in this chapter, record the pertinent information, and send it to QUODATA Corporation. This will allow us to keep our files up-to-date.

The final application of the configuration guide involves software configuration. The license for ETOS includes only the ETOS monitor (ETOS.SV) and ETOS system programs (e.g., SYSTAT, USAGE). You must have separate licenses for all other products (e.g., OS/8, COS, COBOL/8), which you wish to run under ETOS. Some of these products require DEC licenses, which can be purchased from Digital Equipment Corporation or QUODATA. The remainder of the products require QUODATA licenses, which can be purchased from QUODATA or a licensed QUODATA distributor. If you have a license for a product, we send to you the ETOS version of the product. Unlike hardware configuration, different software products may be sent to various users. A list of all products and what they contain is documented in the ETOS Manager's Guide, Section 1.5. When you sign the configuration guide, you are guaranteeing to us that you have the license for all products which you check off. Do not check any products for which you do not have a license.

ETOS V5B CONFIGURATION GUIDE

CUSTOMER DATA
     Name: _____

     Address: _____

     _____

     _____

     Phone: (___) _____ ext. _____

PRINCIPAL CONTACT

     Name: _____ Phone: (___) _____ ext. ____

     Title or Position: _____

INSTALLATION DATA

     Name: _____

     Address: _____

     _____

     _____

     Phone: (___) _____ ext. _____

PRINCIPAL CONTACT

     Name: _____ Phone: (___) _____ ext. ____

     Title or Position: _____

PROCESSOR TYPE (8E, 8M, 8F, OR 8A): _____

PROCESSOR SERIAL NUMBER: _____

ETOS BOARD SERIAL NUMBER: _____

KE8-E Extended Arithmetic Element (indicate if present): ____

REAL-TIME CLOCK (indicate one of below)
    _____ DK8-EA Line-Frequency. Specify line frequency if not 60 Hz: _____
    _____ DK8-EC Crystal. Specify frequency is not 50 Hz: _____
    _____ DK8-EP Programmable
    _____ DKC8-AA I/O Option Board
    _____ Other. Specify Manufacturer, Model: _____

AMOUNT OF MAIN MEMORY (at least 16K): _____K words
If your system uses any memory that is not DEC core, please indicate below.

Memory Fields	General Description	Model, Manufacturer
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

TERMINAL INTERFACES & TERMINALS
Please fill out the table below.
"Interface Type" is one of: KL8-E, KL8-JA, KL8-A, or DKC8-AA.
"KL8-A Line #" is a digit from 0-3, to be filled out for KL8-As only.

ETOS Console #	Interface Type	KL8-A Line #	Device Code /	Model, General Description
0			03/04	
1	KL8-		/	
2	KL8-		/	
3	KL8-		/	
4	KL8-		/	
5	KL8-		/	
6	KL8-		/	
7	KL8-		/	
8	KL8-		/	
9	KL8-		/	
10	KL8-		/	
11	KL8-		/	
12	KL8-		/	
13	KL8-		/	
14	KL8-		/	
15	KL8-		/	
16	KL8-		/	
17	KL8-		/	

OPTIONAL DEVICES
The following devices are accessible under ETOS V5B. Please indicate with an "X" which of these devices are present on your system.

Present ?	Interface Type	# of Drives	Device Code	General Description
_____	* LS8E		66	Line Printer
_____	*/CR8E		63/67	Optical Mark/Punch Card Reader
_____	DKC8-AA		57	Line Printer
_____	KL8-___		66	Line Printer
_____	LP05		66	Line Printer
_____	/PT8E		01/02	High Speed Paper Tape Reader/Punch
_____	RX8E	___	75	Floppy Disk with single density RX01 Drives
_____	/TC08	___	76/77	TC08 DECtape with TU56 Drives
_____	/TD8E	___	77	TD8E DECtape with TU56 Drives

Note: TC08 and TD8E are incompatible because the device codes conflict.
        * = device is supported at ETOS V5B monitor level
        / = device is supported under OS/8 only

SYSTEM DISK STORAGE
Fill out the applicable lines below. If the drive is not an RK05 type, specify the device code.

Controller Type	Device Code	Drive Type	Drive Numbers	Manufacturer Controller and Drive
1. RK8E	74	RK05	_____	Digital Equipment Corporation Digital Equipment Corporation
2. RK8E	74	RK05F	_____	Digital Equipment Corporation Digital Equipment Corporation
3. RK8E	74	PM-DD8/B	_____	Digital Equipment Corporation Plessy Manufactuirng
4. RK8E	74	30	_____	Digital Equipment Corporation Diablo Systems
5. PMDC/8	74	PM-DD8/B	_____	Plessy Manufacturing Plessy Manufacturing
6. 30/10	__	30	_____	System Industries Diablo Systems
7. D.S.D.	__	6000	_____	Data System Design Western Dynex
8. 30/40	__	44B	_____	System Industries Diablo Systems
9. 30/40	__	6000	_____	System Industries Western Dynex

UNSUPPORTED DEVICES
Please indicate any other devices on your system which were not mentioned above. Use the back of this form to provide any additional information that you feel might be useful.

General Description	Device Code	Model Manufacturer
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

SOFTWARE TO BE SUPPLIED WITH ETOS (please indicate with an "X")
Note: You must be licensed for this software from

X	*OS/8 V3
___	*OS/8 V3 FORTRAN IV
___	*OS/8 V3 EXTENSION KIT, OS/8 BASIC
___	*OS/3 V3 EXTENSION KIT, COMMERCIAL BASIC
___	*COS
___	*MACREL
___	!EB-BASIC
___	!QBOL
___	!COBOL/8
___	!SORT/8
___	OTHER (please specify) _____

* = Digital Equipment Corporation Software License required.
! = QUODATA Software License required

DISTRIBUTION MEDIA (indicate one of below)
RKØ5 Disk Pack: _____ S.I. 30/40 Top Loading Disk Pack: _____ DECtape: _____
Floppy Disk: _____ Other (specify): _____

CUSTOMER AUTHORIZATION
The following signature indicates that the customer has read the above data and certifies
that it is correct. This signature must be included for QUODATA to proceed with the order

AUTHORIZED SIGNATURE: _____

PRINT SIGNATURE NAME: _____

DATE: _____

FOR QUODATA USE ONLY
CONFIGURATION FORM UPDATE DATA
Update by: _____ Date: _____ Comment: _____
Update by: _____ Date: _____ Comment: _____
Update by: _____ Date: _____ Comment: _____
DISTRIBUTION
Pack Generation Date, Time: _____
Pack Generated by (name): _____

2.4 SOFTWARE PERFORMANCE REPORTS

If you have a problem with one of the components of ETOS, the most efficient method of reporting the problem is the software performance report. The software performance report contains some installation data and a description of the problem. When we receive a software performance report, we will respond in writing within thirty days. The response could be a patch, an explanation or an acknowledgement of the problem with a time frame for its solution. Written communication is essential for proper support. We also request that you write to us about new features which you would like to see in a future version of ETOS. Most of the features of a new release are decided by tabulating customer requests.

Use a copy of the Software Performance Report on the next page for this communication. The Software Performance Report is your best method of communicating with us. Our method of communicating with you is via the Software Maintenace Reports, which are discussed in 2.4. The software performance reports are also discussed in the ETOS Manager's Guide, Section 8.10.

quodata

Specialists in DEC Software
196 TRUMBULL STREET
HARTFORD, CT. 06103

SOFTWARE PERFORMANCE REPORT

SPR No: _____

Page ___ of ___

Software System	System Program Name	Version	Release	Date

NAME: _____

FIRM: _____

ADDRESS: _____

_____

ZIP: _____

REPORT TYPE

☐ Software Discrepancy

☐ Documentation

☐ Inquiry Discrepancy

☐ Suggestion

PRIORITY

☐ Low

☐ Medium

☐ High

Can this problem be reproduced at will? ☐ Yes ☐ No
Could this have been prevented by better or more documentation? ☐ Yes ☐ No
May we publish this SPR to other users? ☐ Yes ☐ No
Attachments: ☐ Mag Tape ☐ Floppy Disk ☐ DECTape ☐ Listing
☐ Other, please specify _____

CPU Type	Memory Size	Distribution Medium	

Date Received:	Date Started:	Date Finished:	Date Answer Sent:

R.E.V.

2-13

2.5 SOFTWARE MAINTENANCE REPORTS

Periodically, we distribute technical summaries to all warranteed users. Complete information about the contents of the technical summaries is contained in section 8.11, System Manager's Guide. One of the elements of the summaries is a group of software maintenance reports. These reports contain procedures which allow you to fix problems with ETOS, which were reported via the software performance reports. The format of the software maintenance report is as follows.
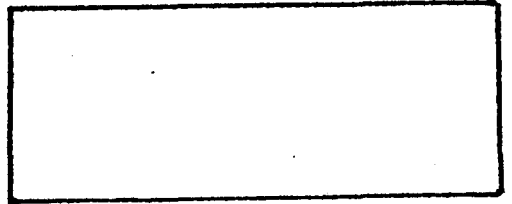
The upper right-hand corner contains the release number of ETOS, the date of the technical summary and the page number for this report. The starting page number for each separate solution is 1. On the bottom of the page, identification information is contained. The software product is the licensed product, which has a problem. The component is the name of the program affected by the maintenance report. The version is the internal version number of the program. This number changes each time a mandatory patch is issued to the program. The sequence number contains an identification number for the maintenance report for a particular software product. This number begins at 1 for each software product. It is used to distinguish several patches to the same product. The "patch" box on the form indicates whether the report is a patch to the respective program or a procedural change which does not involve modification of the program. The "required?" box indicates whether or not the patch is required for all users.

The changes contained in the software maintenance reports must be entered on your disk packs. Entry of these reports and proper media management is discussed in section 8.11, ETOS Manager's Guide. All software maintenance reports must be filed in sequence after page F-4 of the Appendix F of the System Manager's Guide.

quodata™

Specialists in DEC Software
196 TRUMBULL STREET
HARTFORD, CT. 06103

SOFTWARE MAINTENANCE REPORT

software product	version	patch? yes no
component	sequence	required?

2.6   USER COMMENT FORM

A user comment form is contained at the back of every QUODATA
Manual.   This form is to be employed by the user when expressing
his comments about the manual.   These comment forms should be
filled out by all users.   When we change the manuals, we
incorporate the ideas presented to us via these comment forms.

USER COMMENT FORM

Please use this form for any comments you may have relating to the documentation. One of our goals is to produce documentation that is clear, complete, and useful. We welcome your comments and suggestions for additions or deletions, as well as any errors or omission discovered.

Any system problems or suggestions are to be submitted on the Program Discrepancy Form. All comments become the property of QUODATA Corporation. If you wish a reply, kindly include your name and address.

Thank you for your cooperation.

----------------------- COMMENTS ----------------------------

Name: _____   Publication Name:

Address: _____   _____

_____   Version Number: _____

_____

2.7   SOFTWARE UPDATE AND MAINTENANCE SERVICE

As explained in the software license agreement (see 2.2), the ETOS product is warranteed for one year from the date of installation. At the end of the one year period, you have the option to renew the warranty for an additional year. Near the end of expiration of a warranty, QUODATA sends a letter informing you of the expiration and two copies of the update and maintenance service agreement. To renew your warranty, the user must send a purchase order for the appropriate amount and the two copies of the service agreement, signed by an authorized individual. An authorized QUODATA employee inspects the agreement and signs both copies. One copy is returned to the user for his files and one copy is retained for QUODATA's customer files. The agreement lists what is contained in the warranty.

QUODATA CORPORATION
UPDATE AND MAINTENANCE SERVICE AGREEMENT
ETOS

<your name>
<your address>

Upon receipt of $690, QUODATA Corporation (QUODATA) will provide one year additional update and maintenance service for the ETOS software system. This update and maintenance service entitles the CUSTOMER to

A.   Review of Software Performance Reports (SPRs) and attempted correction of software discrepancies which can be recreated for observation at QUODATA by QUODATA personnel. QUODATA will respond to SPRs within (30) days of receipt. Correction by telephone of discrepancies is subject to an hourly charge.

B.   New releases of the basic system including future enhancements which are included as part of the basic system. A media charge will be made for each new release. No distribution will be made on CUSTOMER supplied media.

C.   QUODATA will continue to insure that ETOS is kept current with new releases of DEC's operating software, which in QUODATA's opinion are significant, insofar as documentation of a new release is available.

A separate Software Maintenance Agreement is required for each site which requires direct support from QUODATA.

This maintenance agreement extends from <date-1> to <date-2>, on CPU serial number _____.

Executed this _____ day of _____ , 19__ .

QUODATA CORPORATION   _____
                                                    CUSTOMER

BY:_____   BY:_____
      Duly Authorized   Duly Authorized

TITLE:_____   TITLE:_____

2.8   ETOS BOARD MAINTENANCE

The ETOS module (TSC8-75) is warrantied for a period of two years
after the date of installation. A diagnostic program is supplied
(see 2.11 of the System Manager's Guide), which allows you to
test the validity of the ETOS module. If you determine that the
board is not functioning properly, call QUODATA and report the
problem to a customer service representative. We will air
freight a replacement board to you on the same day that the
problem is reported. You must package the failing board and
return it to us within ten days. If we receive the board within
seven days, there is not charge for the board swap except the
cost of shipping. If we do not receive the board within ten
days, you will be charged for the repair of the failing module.

After the two-year warranty period, the same procedure is used
for board replacement. Whereas the warrantied procedure was
performed for the cost of shipping, there is an additional charge
of $175 after the expiration of the warranty.

2.9   MULTIPLE COPY DISCOUNTS

The first copy of ETOS is purchased at full price. The second,
third and fourth copies of ETOS at the same site are purchased at
75% of the full price. The fifth and above copies of ETOS are
purchased at 50% of the full price. The only restrictions on
this discount is that only the first copy is supported by QUODATA
and all copies must be purchased within thirty months of the
installation of the first copy of ETOS.

CHAPTER 3

COMMUNICATION BETWEEN USERS

3.1   INTRODUCTION

The user base of ETOS is a valuable source of information. It is
often true that an application which you are developing is being
developed or has been developed by another user. This chapter
contains methods of direct and indirect communication between
users and the results of previous communication.

3.2   USER FORUM

Periodially, we distribute technical summaries to all warranteed
users. Complete information about the contents of the technical
summaries is contained in section 8.11, System Manager's Guide.
One of the elements of the summary is a forum for user
discussions. If you have a program of general interest, send us
a description of the program. We will include the description
and your installation name and address in the next technical
summary. Any users who are interested in the program can contact
you directly.   QUODATA does not distribute or support user
software. You should also write to us if you require a program
to perform a specified task. We will include your request in the
next technical summary.

When we prepare a new release for ETOS, some of the general user-
written software is obtained by QUODATA and incorporated into the
new release. At this time, we will support that software. The
next section contains user-written software which has already
been developed.

3.3   USER-DEVELOPED SOFTWARE

Section 3.2 explains the procedure of notifying QUODATA about

general purpose software written by users. This section contains a list of software already developed by users. The name and address of the person who you should contact is listed with the description of the program.

Dr. O. Arthur Stiennon, Park-Regent Medical Building, One South Park Street, Madison, Wisconsin 53715 has developed a BASIC Program called DIABLO.BA, which incorporates most of the features of RUNOFF but also supports ESCape sequences for subscriptions, supercripts, back-spacing, ribbon color change and other features peculiar to the DIABLO printers.

Dr. Lars Palmer, A.B. Haessle, Falk, S-431 Molndal, Sweden has developed a version of the FORTRAN IV plot routines (XXPLOT.RD) which runs under ETOS, an assembler routine which allows OS/8 file specification inside a FORTRAN IV program, and a remote program which links an ETOS machine to a stand-alone PDP8.

William D. Caffey and Charles L. Perkins, Choate Rosemary Hall, Student Computer Center, Christian Street, Wallingford CT 06492 have developed BASIC.OS, a simplified version of OS/8. This BASIC operating system was designed with the neophyte user in mind. Its intent is to provide the beginner with easy access to the system without sacrificing the privileges of the more knowledgeable users. The system is ideally suited to an educational environment, where many of the users require only simple tasks to be performed.

John DiBlasio, Upper St. Clair High School, 1825 McLaughlin Run Road, Upper St. Clair, PA 15241 has developed an assembler version of the test analysis package (ETAP). This package uses mark sense cards to perform automatic test scoring and statistical analysis.

Earl Ellis, U.S. Coast Guard Research and Development Center,

Avery Point, Groton CT Ø634Ø has developed an OS/8 floppy disk handler which allows storage of one and a half times the amount of storage currently available on a floppy diskette.

Lance Albrecht, Picker Corporation, 12 Clintonville Road, Northford CT Ø6472 has developed a cross assembler which assembles Intel 8Ø8Ø code and produces output in 8Ø8Ø format. Lance has also developed an 8Ø8Ø simulator which allows you to run the output of the cross assembler on the PDP8.

Jim Van Zee, Laboratory Data Systems, 1Ø32Ø Ravenna Avenue, Seattle WA 9Ø125 has developed this version with Earl Ellis, U.S. Coast Guard. If you wish to run advanced FOCAL programs, this version of FOCAL is much improved over the standard version of FOCAL distributed with ETOS. An overview of U/W FOCAL follows.

U/W-FOCAL is a greatly expanded version of this popular language, intended for use in conjunction with the OS/8-PS/8 operating system on an 8K or larger machine. It is upward compatible with FOCAL '69, FOCAL-8 and PS/8 FOCAL, while containing many features of other dialects such as FOCL/F, FOCAL 5/69 and COLPAC. U/W-FOCAL offers the PDP8/12 programmer an extremely versatile language which serves in many ways as a miniature operating system of its own. Programs can be created, modified and saved, or loaded and run, all with a few simple keyboard commands. Likewise, data files may be examined, deleted or updated, directories listed to locate files or find free space using only U/W-FOCAL itself. This highly interactive system is FOCAL's big advantage over other OS/8 languages -- even the beginning programmer soon feels that he has control of the system without having to learn about the 'personalities' of many different programs.

U/W-FOCAL has several other advantages which make it the logical choice for many applications: First, it is the only language

currently available which offers more than 6-digit precision without requiring additional hardware on any of the 'family-of-8' machines; for many business and scientific purposes this feature is crucial. Secondly, UWF is extremely easy to 'patch' in order to add new commands or functions to serve the needs of a particular installation. The fact that there are no overlays or relocatable code, as well as the fact that FOCAL runs with the interrupt system enabled facilitates such additions. Finally, the language itself is very appealing, offering many features that make program development more rapid (even on a disk system) than is possible with other OS/8 languages. It is possible, for example, to interrupt an errant program, inspect and perhaps change a few variables, or alter some of the logic, and then immediately resume execution. Such flexibility is simply impossible in other languages, even those with an interactive reputation. Given an environment where the emphasis is mostly on solving 'one-of-a-kind' problems, or where people who are relatively unfamiliar with the computer are expected to develop their own programs, FOCAL is quite likely to be the language of choice.

U/W-FOCAL also has many features which simplify the conversion of programs written in other common languages. Included in this list are: double subscripting, a 'case' command, assigned and/or computer GOTOs and subroutine calls, bidirectional loops which can be nested within a line or terminated at any point, and 'FOCAL Statement Function' calls. All of these features are avialable in the 8K version with room remaining for moderate size programs requiring no more than 120 variables. Longer programs (up to 7500 characters) and more variables (as many as 676 with 16K), are possible for users with additional memory since programs can be linked and/or called as subroutines, and data stored in files, even very large problems can be solved on a small machine. Typical applications have included experimental control, data reduction and process modeling, and even a few

business applications such as payroll and inventory. FOCAL programs can be run under the OS/8 BATCH monitor (taking 'direct commands' from the batch stream) which allows convenient 'overnight' operation for processing large data files.

Of special interest to laboratory users is a 'scope overlay with allows interactive use of almost any CRT for program development and graphic output. Other lab peripherals such as real-time clocks, sense switches, A/D converters, relays and digital I/O, are supported for both the PDP12 and LAB-8/e configurations. While some users have added their own 'background' tasks to UWF to handle realtime data acquisition, it is also possible to run the standard version of U/W-FOCaL in the background under a real-time (multi-user) operating system such as RTS88 or MULTI8. This permits data to be monitored while it is being collected and allows program development concurrent with other system activities.

While the standard version has more than 40 commands and over 20 functions, still more can be added: up to 36 functions are possible and quite a few command letters are available. In addition to being one of the most extensible versions available, U/W-FOCAL is also one of the fastest and most accurate! Typical execution times are frequently 30-40% less than other non-EAE versions, and the EAE versions (available for both the 8/e and earlier EAEs) can add another 10 or 20% to this figure. There is also a noticeable improvement in the overall numerical accuracy due to several important changes to the floating-point package. Worthy of special mention however is the fact that all of U/W-FOCAL's numerical functions now provide full '10-digit' accuracy.

Also noteworthy is an improvement to the treatment of '=' signs. In previous versions the '=' sign was simply part of the syntax of the FOR and SET commands. In the current version, however,

the '=' sign is treated as an 'arithmetic operator' which means that it can be used to save a value in -any- command or function call. For example: TYPE X=FSQT(Y=5) will save both the argument and the result of the function, as well as type out the answer. Similarly, 'SET A=B=D=D=1' is now allowed, as well as things like 'FOR I=N=0,T=5' which initializes both 'I' and 'N' (only the value of 'I' will be incremented by the loop, however) and sets 'T' to the terminal value. This improvement also allows the 'trace' feature to output the value of all 'SET' commands thereby greatly simplifying program 'debugging'.

Only a minimal knowledge of the FOCAL language is necessary to begin programming in FOCAL; for instance knowing that all oeprations are directed by 'command words' which can be abbreviated to a single letter and that programs are organized as numbered lines which fall logically into various 'groups'. Even here U/W-FOCAL offers some important innovations: line numbers may be computed from arithmetic expressions and references to lines within a group need only specify the step number (i.e., 'DO .4'). Negative line numbers have been added to permit group operations starting from other than the first line (good for multiple entry points or things like writing or erasing all the lines following the one specified).

3.4   ETOS USER'S GROUP

Direct communication between users of ETOS is faciliated by the ETOS user's group. Periodic newsletters are mailed to users in this group, which discuss user problems, solutions and ideas. The ETOS user's group is not part of QUODATA Corporation. QUODATA lends any assistance that it can to the organization, but the group is totally run by users. For information on joining this organization, write to the following address.

ETOS User's Group
U.S. Coast Guard R & D Center
Avery Point, Groton CT 06340
Attention: Earl Ellis