

## Product Information Announcement

Title

#### **OS/3 System Index and Publications Guide**

This Library Memo announces the release and availability of the System 80 OS/3 System Index and Publications Guide, UP-8874 Rev. 3.

This index and guide is a standard library item. It is part of the standard library provided automatically with the purchase of the product.

This book helps the user to access information in the various documents provided with the user library. It describes the types of publications available and contains two configuration charts of these manuals. An index of OS/3 terms and topics is also included, along with a glossary of terms.

This revision provides updated information on the types of documents contained in the OS/3 library. The system index has been updated and expanded.

Announcement only: MBOO, SAB, and SAE Announcement and attachments: MB01, MBA9, MBB1, and MBW System: OS/3 Release: April 1990

Part Number: UP-8874 Rev. 3

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C X 20 Y A Y A		UP-8874 Rev. 1

This Library Memo announces the release and availability of "SPERRY UNIVAC<sup>®</sup> Operating System/3 (OS/3) System Index and Publications Guide User Guide", UP-8874 Rev. 1.

This revision provides an up-to-date overview of the publications available to System 80 users of OS/3. The System index is expanded to include all features available for release 7.1. A new appendix provides statement conventions used throughout the OS/3 library.

All other changes are corrections or expanded descriptions applicable to features present prior to release 7.1.

<u>Destruction Notice</u>: If you are going to OS/3 release 7.1, use this revision and destroy all previous copies. If you are not going to OS/3 release 7.1, retain the copy you are now using and store this revision for future use.

Copies of UP-8874 will be available for 6 months after the release of 7.1. Should you need additional copies of this edition, you should order them within 90 days of the release of 7.1. When ordering the previous edition of a manual, be sure to identify the exact revision and update packages desired.

Additional copies may be ordered by your local Sperry Univac representative.

LIBRARY MEMO ONLY LIBRARY MEMO AND ATTACHMENTS

Mailing Lists BZ, CZ and MZ Mailing Lists 28U and 29U (Covers and 115 pages) Library Memo for UP-8874 Rev. 1

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September, 1981

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# UNISYS

System 80 OS/3

System Index and Publications Guide

April 1990

Printed in U S America UP-8874 Rev. 3





System 80 OS/3

System Index and Publications Guide

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Correspondence regarding this publication should be forwarded to Unisys Corporation either by using the Business Reply Mail form at the back of this manual or by addressing remarks directly to Unisys Corporation, OS/3 Systems Product Information Development, P.O. Box 500, Mail Station E5-114, Blue Bell, Pennsylvania, 19424, U.S.A.

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\* Single-sided 11 X 17 foldout pages

## **About This Guide**

#### Purpose

This guide is provided to help you access information in the various documents provided with the System 80 Operating System/3 (OS/3) library.

### Scope

This guide describes the types of publications available and contains two configuration charts of these manuals. An index (organized by subject name or phrase) to the OS/3 library is also included, along with a glossary of terms.

### Organization

This guide is organized as follows:

#### Section 1. OS/3 Publications - An Overview

Describes the types of OS/3 publications and discusses ordering, maintenance (inserting update pages, etc.), and distribution procedures. It also describes the various binders available for the documents, the user comments form (a means of communicating suggestions, corrections, etc.), and the software release levels of the operating system that you run.

#### Section 2. Publications Configurations Charts

Contains two publications configuration charts to help you understand the composition and structure of the OS/3 library. One chart illustrates the System 80 models 8/10/15/20 publications configuration, and the other chart illustrates the System 80 model 7E publications configuration.

#### Section 3. System Index

Provides a comprehensive index of subjects covered in the OS/3 library, giving the document number in which details of the subject are described.

#### Section 4. Glossary of Terms

Defines terms that are unique to the OS/3 library or those general data processing terms that may be used in a specific way with OS/3.

#### **Appendix A. Statement Conventions**

Explains the rules and conventions of statements and commands in the OS/3 library. The formats are illustrated and the parameters and specifications are described.

## **Related Documentation**

The OS/3 Library Overview, UP-8986, provides short descriptions of the documents in the OS/3 library to aid in determining where specific information can be found. It gives the revision and update levels for OS/3 documentation released as of the indicated date and provides ordering procedures.

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## Section 1 OS/3 Publications - An Overview

### 1.1. General

The OS/3 publications available for System 80 describe the system, its operation, and the use of individual hardware and software components. This section describes the various types of publications and discusses how they are maintained, distributed, and ordered.

## **1.2.** Types of Publications

The basic OS/3 library consists of the following types of publications:

- Library overview
- System index
- Overviews
- Guides
- Quick-reference guides
- Reference manuals
- Reference handbooks
- Reference cards
- Templates
- System release documentation

#### 1.2.1. Library Overview

The library overview introduces the documents in the OS/3 product information library. It provides a means of quickly and easily reviewing the components of the library and determining where specific information can be found. It is also useful when ordering OS/3 publications.

The library overview provides the revision and update levels for all OS/3 documentation released as of the indicated date.

#### 1.2.2. System Index

The system index combines the index information for the OS/3 library into a single document. (Other documents in the library continue to have their own indexes.) This composite index contains more detailed information than the library overview; it enables you to use a specific term, command, or topic of interest to quickly locate the appropriate documentation.

#### 1.2.3. Overviews

Overviews describe or introduce an OS/3 product.

#### **Capabilities Overviews**

The System 80 capabilities overviews describe the hardware and software of the various System 80 models. These manuals summarize the capabilities and benefits of the individual systems to help you evaluate which OS/3 products best meet your needs.

#### **Technical Overviews**

Technical overviews introduce products and systems so extensive or complex that they require a separate introductory document. These overviews contain conceptual rather than procedural or reference information.

#### 1.2.4. Guides

Guides contain step-by-step procedural and need-to-know information that the primary audience needs to accomplish the task or tasks specified in the title. This type of document can also include reference information.

The OS/3 library includes the following types of guides: installation, programming, operating, and migration.

#### Installation Guides

Installation guides provide the procedures for installing system hardware or software products.

#### **Programming Guides**

Programming guides are the primary means of explaining OS/3 hardware and software components. These manuals provide a detailed explanation of the subject, including procedures and examples where appropriate.

Programming guides are designed for the novice user or a user who is unfamiliar with the product.

#### **Operating Guides**

Operating guides provide initial training information for a variety of OS/3 hardware and software products. These guides outline the operator's responsibilities and include the specific instructions needed to perform specific tasks. These manuals can also be used for reference after the operator has become proficient in the use of the product.

#### **Migration Guides**

Migration guides are provided with the System 80 to help users prepare their sites for installation of a system. Migration guides provide information that users need when upgrading from the Series 90 or earlier models of the System 80 to a more current System 80 model.

#### 1.2.5. Quick-Reference Guides

Quick-reference guides contain condensed procedural, need-to-know, and reference information that is organized for quick access and ease of use. Quick-reference guides do not document all product functions; for example, they do not include infrequently used procedures. Quick-reference guides may also include lists of common error messages, status codes, system communications, and other frequently required information.

Quick-reference guides are written for users who are familiar with the subject.

#### 1.2.6. Reference Manuals

Reference manuals are also a primary means of explaining OS/3 hardware and software products. A reference manual, however, is written for a user who is familiar with the subject and who is looking for specific data.

The information in reference manuals is generally arranged in an easy-to-reference format; often the organization is alphabetical.

Most of the reference manuals in the OS/3 library are programming reference manuals. These document all product functions such as commands, programs, statements, and status messages.

#### 1.2.7. Reference Handbooks

Reference handbooks contain a limited amount of condensed reference information that is organized for quick retrieval. Reference handbooks are written for users who are familiar with the subject.

A reference handbook measures 4-1/8 by 6-1/2 inches.

#### 1.2.8. Reference Cards

Reference cards contain condensed reference information that can be placed on a card for quick retrieval. Reference cards are written for users who are familiar with the subject.

A reference card measures 3-1/2 by 8-1/2 inches.

#### 1.2.9. Templates

Templates are printed strips or sheets that can be used as a development aid. The size and shape of the template is defined by the needs of the product.

#### 1.2.10. System Release Documentation

System release documentation consists of two documents: the system release announcement (SRA) and the system release description (SRD). The SRA is distributed prior to the SRD to announce a forthcoming release and provides a description of the release and information on ordering the product. The SRD is distributed with the release and contains detailed information about the released product and instructions for installing the product.

### **1.3.** Publications Maintenance

#### 1.3.1. Revisions and Updates for UP Documents

A revision is a reissue of an entire document. Each revision is indicated by an Arabic number, starting with 1. For example, when UP-8067 is revised for the seventh time, it is referred to as UP-8067 Rev. 7. This designation appears on the front cover and on the bottom of each page.

An update is used to issue small changes to selected portions or pages of a publication. Only those pages having changes are issued. Updates are designated by letters, starting at A. This letter appears at the bottom of each changed page. For example, the second update to UP-9986 Rev. 2 is referred to as UP-9986 Rev. 2, Update B.

#### 1.3.2. Revisions/Updates/Errata for 11-Digit Documents

The last three digits of the 11-digit part number  $(1234\ 5678\ xyz)$  designate revisions, updates, and errata. The first digit (x) designates revision levels, the second digit (y) designates updates, and the third digit (z) designates errata.

The first edition or original document will always have a suffix of 000. The following is an example of how this system works:

1234	5678	-000	Original manual	
------	------	------	-----------------	--

- -010 Update 1 to original manual
- -020 Update 2 to original manual
- -021 Errata 1 to original manual with 2 updates
- 1234 5678 -100 Revision 1 to original manual
  - -110 Update 1 to revision 1
    - -200 Revision 2 to original manual
    - -201 Errata 1 to revision 2

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#### 1.3.3. Change Arrows and Change Bars

Change arrows or change bars are placed in the margins of updates to indicate the areas of technical change or additions. Editorial changes are not marked.

#### 1.3.4. Page Status Summary

Each loose-leaf publication contains a page status summary. It tells how many pages are in each section, and in updates it lists the update level of each page; use it as a guide for adding, replacing, or deleting pages and tab breakers in the updated document. A page status summary is issued with each new, revised, or updated looseleaf publication.

## 1.4. Announcement, Distribution, and Ordering

#### 1.4.1. Announcement

The availability of a new, revised, or updated publication is announced by a library memo. The library memo gives the name, document number, revision, and update level (where applicable); a general explanation of the publication's contents; and ordering information.

#### 1.4.2. Distribution

You receive one library of all the documentation needed to support the product you purchase. Additional libraries and individual manuals are separately priced and must be ordered through your local Unisys representative.

#### 1.4.3. Ordering

Publications are obtained in two ways:

- 1. By individually ordering a particular publication
- 2. By having your name placed on a mailing list

When you place your name on a mailing list, the library memos and all new, revised, and updated publications associated with that mail list are automatically forwarded to you. There are different mailing lists for the various OS/3 products. For additional information regarding mailing lists, contact your local Unisys representative.

## 1.5. Binders and Index Tabs

A complete set of binders (and index tabs/page breakers, when applicable) is provided with the initial library you receive. If additional libraries or individual documents are ordered, binders must be ordered as well; these binders are priced separately and must be ordered through your local Unisys branch office.

Document Page Size in Inches	Binder Size in Inches	Form Number <sup>1</sup> for Ordering
6-1/2 x 8-1/2 (less than 250 pages)	9 x 8-1/4 x 3/4	1211778 <sup>2</sup>
6-1/2 x 8-1/2 (250 to 500 pages)	9 x 8-1/4 x 1-1/2	1211752 <sup>2</sup>
8-1/2 x 11 (less than 250 pages)	11-1/2 x 10 x 1	1211810
8-1/2 x 11 (250 to 500 pages)	11-1/2 x 10-1/2 x 1-1/2	1211802
8-1/2 x 11 (500 to 700 pages)	11-1/2 x 11-5/8 x 2	1211794

#### Notes:

- 1. Your library may also include documents with 3-3/4" by 8-1/2" pages. To order replacement binders for these books, use form number 1211778 or 1211752 depending upon the number of pages.
- 2. A slipcase is included with these binders

### **1.6. User Comments**

A user comments form is included in all manuals except capabilities overviews and reference handbooks. It allows you to submit comments about the document. Each comment is evaluated and you are notified of its disposition.

Occasionally, comments are submitted that really apply to the software rather than to the document. In these instances, your comment is forwarded to the appropriate software development group.

## 1.7. Release Levels

The software release level supported by each publication is provided on the library memo and title page. This level reflects the current status of the software at the time the publication is released.

You may receive document revisions or updates that reflect a more current release than your present level. These manuals, however, continue to support previous levels (although the new document may contain enhancements that are not part of your current software).

When you receive an update or revision to one of your documents, you can incorporate it into your library by replacing pages (if it is an update) or by replacing the entire document (if it is a revision).

## Section 2 Publications Configuration Charts

This section contains two charts showing the available System 80 publications. The charts include the title, document number, and type of each publication.

Figure 2-1 shows the models 8/10/15/20 publications. Figure 2-2 shows the model 7E publications.





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A18599B

Figure 2-1. System 80 Models 8/10/15/20 User Publications Configuration

SYSTEM 80 MODEL 7E PUBLICATIONS



A18601A



Figure 2-2. System 80 Model 7E User Publications Configuration

## Section 3 System Index

## 3.1. General

This section contains an index of the terms and topics used in System 80 publications. It is designed to be a handy, quick-reference tool for locating the primary documents that explain these terms and topics.

## 3.2. Which Publications Were Indexed?

The following types of publications were used to compile the system index:

- Programming reference manuals
- Operating guides
- Quick-reference guides
- Installation guides
- Migration guides
- Technical overviews
- Capabilities overviews

## 3.3. How to Use the System Index

The index is an alphabetized list of terms and topics. Each term in the index is followed by the number of the document that contains information about that term. To find out the name of the document, refer to Table 3-1, which lists the documents in numerical order by number. If a term has modifiers, a document number appears next to each modifier. Where multiple document numbers are given for a term, all documents contain information about that term.

Many terms in the index are modified by an acronym that identifies the source of the particular term or tells you something about that term. Here are two examples:

• base register assignment directives (BAL), 8913

This tells you that base register assignment directives are discussed in the document describing basic assembly language (UP-8913).

• data circuit-terminating equipment ICAM, 9744 model 7E, 70023908 models 3-6 and 8-20, 9745

This tells you that you'll find information about data circuit-terminating equipment in three different documents, one describing ICAM and the other two relating specifically to the various System 80 models.

Acronyms used in the index are defined in Table 3-2.

Table 3-1. Documents Referenced in the System Index	Table 3-1.	Documents	Referenced	in the	System Index
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Doc. No.	Title
UP-7536	Fundamentals of FORTRAN Programmer Reference
UP-8022	DMS Data Description Language Programming Reference Manual
UP-8044	Report Program Generator II (RPG II) Programming Reference Manual
UP-8067	Report Program Generator II (RPG II) Programming Guide
UP-8076	System Messages Reference Manual
UP-8253	Report Program Generator II (RPG II) Reference Card
UP-8424	ICAM Interfacing a Remote Device Handler Programmer Reference
UP-8549	ICAM Direct Data Interface (DDI) User Guide
UP-8550	ICAM Standard MCP Interface Programming Guide
UP-8612	1974 American Standard COBOL Quick-Reference Guide
UP-8613	1974 American Standard COBOL Programming Reference Manual
UP-8748	IMS/DMS Interface Programming Guide
UP-8805	1974 American Standard COBOL Technical Overview
UP-8806	Dialog Specification Language User Guide/Programmer Reference
UP-8811	Distributed Data Processing Programming Guide
UP-8814	FORTRAN IV <sup>TM</sup> Programming Reference Manual
UP-8815	FORTRAN IV Quick-Reference Guide
UP-8819	Independent Sort/Merge Programming Guide
UP-8831	Supervisor Technical Overview
UP-8832	Supervisor Macroinstructions Programming Reference Manual
UP-8834	Data Utilities Operating Guide
UP-8836	SORT3 Programming Guide
UP-8839	System 80 Installation Guide
UP-8841	System Service Programs (SSP) Operating Guide
UP-8842	System Service Programs (SSP) Programming Reference Manual
UP-8855	ESCORT <sup>TM</sup> Programming Language Programming Guide
UP-8856	ESCORT Programming Language Quick-Reference Guide
UP-8858	Dialog Processor Programming Guide
UP-8859	System 80 Operations Guide
UP-8868	System 80 Hardware and Software Quick-Reference Guide
UP-8870	System 80 Technical Overview
UP-8913	Assembler Programming Guide
UP-8914	Assembler Programming Reference Manual
UP-8915	System 80 Operator Maintenance Guide
UP-8986	Library Overview

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continued

Doc. No.	Title
UP-9009	Data Management System (DMS) Quick-Reference Guide
UP-9072	Sort/Merge Macroinstructions Programming Guide
UP-9109	BASIC Programming Guide
UP-9168	BASIC Programming Reference Manual
UP-9169	BASIC Programming Reference Handbook
UP-9205	Information Management System (IMS) Technical Overview
UP-9206	IMS Action Programming in RPG II Programming Guide
UP-9207	IMS COBOL/Assembler Action Programs Programming Guide
UP-9209	IMS Data Definition and UNIQUE Programming Guide
UP-9317	Menu Services Technical Overview
UP-9318	System/32, 34 to OS/3 Conversion User Guide
UP-9502	NTR Utility Programming Guide
UP-9607	System 80 Models 8/10/15/20 Processor Complex Controllers
	Vol. 1 - Controllers of the Selector Channel and Byte Multiplexer
	Programming Reference Manual
UP-9608	System 80 Models 8/10/15/20 Processor and Central Peripherals
	Operating Guide
UP-9637	System 80 Models 8/10/20 Customer Setup Peripherals Planning Guide
UP-9644	System 80 Models 8/10/20 Customer Setup Peripherals Installation Guide
UP-9692	System 80 Models 8/10/15/20 Processor Programming Reference Manual
UP-9731	File Placement Analyzer (FIPLAN) Programming Guide
UP-9732	System 80 Models 8/10/15/20 Processor Complex Controllers
	Vol. 2 - Controllers and Communications Channels of the I/O Processor
	Programming Reference Manual
UP-9734	MAPPER <sup>®</sup> 80 Run Functions Programming Guide
UP-9735	MAPPER 80 Manual Functions Programming Guide
UP-9736	MAPPER 80 Forms Generation and Utilities Programming Guide
UP-9737	MAPPER 80 Administration and Operations Guide
UP-9744	ICAM Technical Overview
JP-9745	ICAM Operations Guide
JP-9746	ICAM Communications Physical Interface Programming Guide
JP-9748	ICAM Utilities Programming Guide
JP-9749	ICAM Programming Reference Manual
JP-9972	Interactive Services Operating Guide
JP-9973	Interactive Services Commands and Facilities Quick-Reference Guide
UP-9974	COBOL Editor (COBEDT) Programming Guide
JP-9975	Spooling and Job Accounting Operating Guide

### Table 3-1. Documents Referenced in the System Index (cont.)

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continued
Table 3-1.	<b>Documents</b>	Referenced	in the S	System Inde	x (cont.)
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Doc. No.	Title
UP-9976	General Editor (EDT) Operating Guide
UP-9977	Screen Format Services Technical Overview
UP-9978	Consolidated Data Management (CDM) Programming Guide
UP-9979	CDM Macroinstructions Programming Guide
UP-9980	Dump Analysis Programming Guide
UP-9981	RPG II Editor Operations Guide
UP-9982	File Cataloging Technical Overview
UP-9983	System Activity Monitor Programming Guide
UP-9984	Job Control Programming Reference Manual
UP-9985	System Operations Quick-Reference Guide
UP-9986	Job Control Language Programming Guide
UP-10003	Installation Verification Procedures Operating Guide
UP-10047	ICAM Remote Terminal Processor (RTP) Programming Guide
UP-10870	DMS Support Functions Programming Guide
UP-11907	IMS System Support Functions Programming Guide
UP-11954	PC On-line Software Guide to On-line Transfer
UP-12013	DMS Data Manipulation Language Programming Guide
UP-12027	Information Management System (IMS) Operations Guide
UP-12028	Security Maintenance Utility Operations Guide
UP-12031	PC On-line Software Guide to On-line Extract
UP-12406	PC On-line Software Guide to On-line Disk
UP-12407	OS/3 MAPPER 5 System Connectivity Operating Guide
UP-12443	System 80 Models 10-20 Capabilities Overview
UP-12649	System 80 Models 10/15/20 Migration Guide
UP - 14178	Pascal Programming Reference Manual
UP - 14179	FORTRAN 77 Programming Guide
UP-14207	OS/3 to UNIX ${ m I\!R}$ OS/3 Connectivity Operating Guide
UP-14208	OS/3 to PC Connectivity Operating Guide
UP-14770	System 80 Model 7E Capabilities Overview
70023817	System 80 Model 7E Central Equipment Complex Programming Reference Manual
70023825	System 80 Model 7E Central Equipment Complex Operating Guide
70023833	System 80 Model 7E Hardware and Software Quick-Reference Guide
70023858	System 80 Model 7E Installation Guide
70023866	System 80 Model 7E Operations Guide
70023874	System 80 Model 7E Transition Guide
70023882	System 80 Model 7E Quick-Reference Guide

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Doc. No.	Title			
70023908	System 80 Model OS/3 ICAM Operations Guide			
70023916	System 80 Technical Support Overview			
70023932	COBOL 85 Technical Overview			
70023940	COBOL 85 Programming Reference Manual			
70023965	C Compiler Programming Reference Manual			
70023981	Transaction Platform System (TPS) Programming Reference Manual (Vol. 1)			
70023999	Transaction Platform System (TPS) Programming Reference Manual (Vol. 2)			
70027685	COBTRN303 Installation and Operations Guide			

Table 3-1. Documents Referenced in the System Index (cont.)

Table 3-2.	Acronyms and	Abbreviations	Used in the Syst	em Index
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Acronym	Meaning		
ANSI	American National Standards Institute		
ASCII	American Standard Code for Information Interchange		
ASMTRN	Assembly program translator		
BAL	Basic assembly language		
BSC	Binary synchronous communications		
CDIB	Common data interface block		
CDM	Consolidated data management		
CMCS	COBOL message control system		
COBEDT	COBOL editor		
COBOL	Common Business Oriented Language		
CPI	Communications physical interface		
CUP	Communications user program		
DDI	Direct data interface		
DDL	Data description language		
DDP	Distributed data processing		
DICE	Device independent control expressions		
DMCL	Data media control language		
DML	Data manipulation language		
DMS	Data base management system		
DP	Dialog processor		
DSL	Dialog specification language		
DSLT	Dialog specification language translator		
DUPL	Data utility processor language		
DUST	Deferred user service task		
EBCDIC	Extended Binary Coded decimal Interchange Code		
EDT	General editor		
FIPLAN	File placement analyzer		
FPU	File processing utility		
ICAM	Integrated communications access method		
IDES	ICAM device emulation system		
IMS	Information management system		
IS	Interactive services		
ITF	ICAM trace facility		
IVP	Installation verification procedures		
JCL	Job control language		
JCON1	Job control conversion utility		
MCP			
MCP	Message control program Message control table		
MIRAM	•		
MPPS	Multiple indexed random access method		
NTR	Message processing procedure specifications		
OCL	Nine-thousand remote utility system		
UCL	Operation control language		

continued

Acronym	Meaning
PC	Personal computer
PCTRAN	PC file transfer utility
RBP	Remote batch processor
RDH	Remote device handler
RIB	Resource information block
RPG	Report program generator
RPGEDT	RPG II editor
RTP	Remote terminal processor
SAM	System activity monitor
SAT	Sequential access technique
SDU	System definition utility
SFS	Screen format services
SMP	Software maintenance program
SMU	Security maintenance utility
SSP	System service programs
STDMCP	Standard MCP interface
STEP	Synchronous terminal emulation package
SYSCON	System console
TPS	Transaction platform pystem
UNIQUE	Uniform inquiry update element
UPSI	User program switch indicator
UTS	Universal terminal system
VSN	Volume serial number
VTOC	Volume table of contents
vv	VTOC verify
WS	Workstation
WSAM	Workstation access method

Table 3-2. Acronyms and Abbreviations Used in the System Index (cont.)

### A

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# Section 4 Glossary of Terms

This section contains terms that are unique to OS/3 as well as general data processing terms used in a specific way with OS/3. For definitions of those terms that are not found in this section, refer to the *Dictionary for Information Processing Systems*, UP-10050 or the applicable ANSI standard.

## A

## ABR

See automatic backward recovery.

## ACON

An address constant.

## ACT (activity control task)

The software element of the MCP responsible for scheduling, initiating activity, and advancing the queues of activity requests that coordinate the services of the MCP and its facilities.

### action

The basic unit of work in IMS. An action consists of the input of a message from a terminal, the processing of the message by one or more action programs that may access data files, and the output of at least one message to the originating terminal.

## action code

Tells independent sort/merge what action to take during your own-code routine for input file processing (E15) or output file processing (E35). The action code is placed in the *action word*.

### action program

An independent, relocatable program load module defined to IMS and conforming to the programming conventions established by IMS. One or more action programs may be executed in an action.

## action word

A 1-word (4-byte) entry in the exit parameter list, a table built by independent sort/merge to specify location of records and information affecting record processing. The action word contains the *action code* and is used by exits E15 and E35.

#### active routine

A procedure or function that is in the process of being executed. If a calls b, and b calls c, all of the routines a, b, and c are active routines, even though b will not resume execution until c returns, and a will not resume execution until b returns.

#### active variant

The variant currently being used by Pascal. See variant.

## activity-on-node

A type of diagram notation where rectangles represent activities and arrows depict the interrelationship of activities.

#### address-out sort

A method of sorting in which the output file produced contains only the addresses of the records sorted. For independent sort/merge and subroutine sort/merge programs, the output produced consists of the 10-byte direct address for each record sorted. For SORT3, the output consists of the 10-byte relative address for each record sorted.

### ADDROUT file processing

A sequential file can be processed in a sequence other than the normal sequence, that is, the records can be processed in any order by using an ADDROUT (address output) file. The ADDROUT file contains the addresses of the records to be processed. Several ADDROUT files can be used to retrieve records from the original file in different sequences.

#### alternate collation sequence

A collating sequence other than the standard one used by the sort programs for arranging data in particular formats. Alternate collation sequences must be defined by the user. Independent sort/merge requires transition tables and the E84 exit code. Subroutine sort/merge requires transition tables and the USEQ keyword parameter. Sort/3 requires an S entered in column 26 of the header specification and ALTSEQ statements in the control stream.

#### **ARP** (activity request packet)

A series of constants and formatted storage locations for communication requests and parameters between modules and/or user programs.

#### **ASCII**

American National Standard Code for Information Interchange.

#### asynchronous (nonsynchronous)

A method of transmission or type of equipment that uses essential timing information in each character transmitted.

#### automatic backward recovery (ABR)

A DMS online recovery process that restores the data base by rolling back the uncommitted update (those updates that have been made since the most recent checkpoint or since the beginning of the run unit).

#### automatic deletion

A function performed by the linkage editor that automatically deletes control sections and entry points previously defined either in the phase being built or in a phase that is on the path of the current phase.

#### automatic inclusion

A function performed by the linkage editor that automatically includes object modules needed for referencing in a load module for which no definitions exist.

## B

## backward pass

Time calculations from network end events or activities to network start events or activities.

## batch environment

Submitting jobs by coding programs and then running the jobs in sequence, the next one starting after the previous one has completed.

## batch mode

In ICAM, a means of communicating with data communications terminals in which messages are sent consecutively from or to the terminal without the interruption by polling.

## BCC (block check character)

An error checking character that is typically the exclusive OR of all characters in a blocked message.

## BCW (buffer control word)

A control block that specifies the operation, data address, I/O storage protection key, byte count, and other control information used by the integrated peripheral channels and the multiplexer channel.

## beginning of file (BOF)

The logical start of a file.

#### bin

In sort/merge, a fixed-length subunit of a variable-length record. Variable-length records to be sorted are divided into bins to conserve main storage space and provide optimum processing speed. The first bin of a record contains all of the *control fields* and the 4-byte record length field.

#### binary expression

Any Pascal expression that contains an operator between two operands. These operators are called binary or dyadic operators.

#### block

The portion of a file transferred into or out of main storage by a single access. Contains one or more *records* 

## block descriptor word (BDW)

In variable-length record format, the first four bytes of each logical block, the first two bytes of which contain the length of the logical block.

#### block load module

Block load modules are standard load modules that have been converted to block format. This format increases the efficiency of program loading because all or large parts of the overlay phases may be loaded by a single I/O operation, resulting in fewer disk accesses.

#### block number processing

A technique to ensure correct tape positioning whereby a block sequence number is written on output tape files and checked on input tape files. This block count is recorded on tape in the first three bytes of the block, and consists of a 4-bit tape mark count and a 20-bit block number count.

#### breakpoint

A point in a spool subfile where the subfile is closed then reopened so that the contents of the subfile can be output to the physical device before the job step terminates.

## BSC

Binary synchronous communications line protocol.

#### buffer

An I/O area in main storage that compensates for the differences in speed between low-speed I/O devices and high-speed main storage processing. In a subroutine sort/merge program, assigning two buffer areas substantially increases sort speed.

#### buffer control

A routine in ICAM that supplies and makes the most efficient use of data storage areas allocated to each CCA under the control of the MCP.

#### buffer offset

In ASCII magnetic tape labeling practices, the term applied to any information required at the front of each data block on tape, not specified by the standard but needed for a user application. This information may include such items as block length, block address of the last record in the block, initial padding for word machines, date, times of transmission, etc. The length of the buffer offset field, if used, is specified in field 7 of the second *file header label* (HDR2).

#### buffer(ing)

A temporary storage facility used in ICAM to collect and contain data while it is being received from, or just prior to its transfer to, a communications line. Buffering the data, as it is called, is a method of compensating for the difference in speed between the transmission rate of the communications line and the transfer rate of the processor channel.

## burst mode spooling

A mode of spooling operation that directs that all queued output files from completed job steps are written out on a first-in, first-out basis, regardless of what job created them. In contrast, non-burst operation directs that queued output files are written according to their job's termination order (first terminated, first out), and further, in the order in which their job created them.

## byte.bit format

A binary key field can start at a specific bit within a byte. The starting position and key field length of a binary key field are indicated in byte.bit format. For example, if a key field starts at bit 2 of byte 9 in a record, 9.2 should be specified as the starting position in an independent sort/merge, 8.2 in a subroutine sort/merge. (See byte numbering method.) For key field length, if the key field extends from bit 2 of byte 10 through bit 5 of byte 12, the length would be specified as 2.4.

#### byte numbering method

Independent sort/merge and subroutine sort/merge use different byte numbering methods for indicating the starting position of key fields. The byte numbering method used by independent sort/merge is compatible with other systems. Key field starting positions are indicated by byte numbers, starting at 1 for the first byte. Subroutine sort/merge uses byte position numbers, starting at 0 for the first byte. Byte position number is always 1 less than byte number.

## С

## CA

See communications adapter.

## calc module

A module in DMS that performs a transformation or hashing algorithm by accepting the CALC key as input and by producing a binary number that is later normalized to a page number within a specified area of a data base. The calc module is provided in load module form with the DMS release in the \$Y\$LOD library, as well as in the DBPAG utility load module.

#### canned message

A generalized message kept in a cataloged message file on disk that may be displayed on the system console and written to the system log file.

### CAW

See channel address word.

#### CCA

See communication control area.

### CCB

See command control block.

## CCR

See channel control routine.

#### CCW

See channel command word.

### channel

A path along which data is sent or received.

#### channel address word (CAW)

A control block that specifies the location of the first CCW to be used in the execution of an I/O operation.

#### channel command word (CCW)

A control block that specifies the operation, data address, byte count, and other control information used by the selector channel. CCW is also the call for a macro of the OS/3 supervisor that generates a channel control word to provide a hardware parameter interface to the selector channels for use by PIOCS. See also *command control word*.

### channel control routine (CCR)

A software module of the ICAM system that generates, executes, and determines the completion statuses of all I/O functions to be presented to the communications hardware. The interaction of the CCR makes it unnecessary for the user to have to distinguish between the characteristics of a communications device and the characteristics of the line to which the device is connected.

## character code conversion

Character-by-character translation from one character code convention (for example, EBCDIC, ASCII, or XS-3) to another.

## check-sum word

Provides a check of data integrity during read and write transfer operations (I/O processing) between an independent or subroutine sort/merge operation and the sort work files. Normally, a checksum word is generated for each output data *block* written to the tape or disk working-storage area. The checksum word is calculated by logically summing, into a 1-word field, the *records* in the data block before they are written out to the sort work file. After the data blocks are read back into main storage from the sort work file, a checksum word is recalculated. Data integrity is then verified by comparing the new checksum word with the old checksum word. If the comparison is unequal, the sort terminates. Calculation of a checksum word can be suppressed by specifying the NOCKSM keyword parameter.

## checkpoint

A point in a program or routine where a recording of the contents of main storage and the state of peripheral units is made so that, in the event of machine failure or some other interruption, a job can be restarted at an intermediate point rather than from the beginning.

## CNC

See communications network controller.

#### CODASYL

An acronym for Conference for Data Systems Languages. CODASYL was created by the Department of Defense, computer manufacturers, and computer users. They have specified a number of manufacturer-independent, application-independent software tools designed to form the basis of data base management. The COBOL programming language is a product of this committee.

#### code set

A predefined series of records that make up either a source, proc, object, macro, or load module, or a module group.

### collation sequence

The consecutive order in which data is arranged in a particular data format.

#### column binary

A punched card code so constructed that each card column requires two types of main storage. Synonymous with *image code*.

## command control block (CCB)

A command block, located in main storage, that contains constants and control words or addresses of control words used by the *PIOCS* to execute a command.

#### command control word (CCW)

A *channel command word*, located in main storage, that specifies the I/O operation to be performed, the start of the buffer, and the number of bytes to be transferred.

## command zone operations

A CDM mode (system/command zone operations) that routes messages to various logs and displays messages on the system console, master workstation, an individual workstation, or all workstations associated with a file.

#### common section

A common section (COM) is a unit of coding (constants only) that is, in itself, an entity. A COM is contained in an object module.

#### common storage areas

Load module areas that are common to more than one phase of a load module. The size of each storage area is equal to the largest size requested by all object module elements referring to a particular COM section.

#### common storage definition

A common storage area for two or more separately assembled routines.

#### communication region

A 12-byte field in the job preamble used to pass information from one job step to the next.

#### communications, multiplexer module

A module that contains the hardware required to service line adapter input to multiplexer channels.

#### communications awake facility

Permits a communications program or non-communications program to activate (awake) any registered communications program. This facility also allows your programs to optionally pass data or parameters to a registered program in the form of a message called a datagram.

#### communications adapter (CA)

A subsystem that acts as a controller for the communications lines via the integrated peripheral channel. Contains the communications multiplexer-module and line adapters necessary to perform control functions to interface with the central processor.

#### communications control area (CCA)

A software element generated dynamically in the main storage load area for a predefined network after execution of the NETREQ macroinstruction. In the ICAM system, this term is synonymous with *network definition*.

#### communications dispatcher

A module or routine that controls serial input/output (SIO) function execution, packet checks, and chaining.

#### communications network controller (CNC)

A software module of ICAM that controls message traffic entering or leaving the system to avoid overload connections.

#### communications output printer (COP)

An auxiliary printer for a terminal (for example, UNISCOPE, UTS 400 display terminal, and UVT).

## communications physical input/output control packet (CPIOCP)

A software packet containing the necessary information for driving the communications controller through CPIOCS. The packet includes information such as function code, function status, channel identification, data length, and data address.

## communications physical input/output control system (CPIOCS)

A physical I/O system that allows your program to work with the single line communications adapters (SLCA).

## communications user program (CUP)

A program written by the user to process communication applications. See message processing program.

#### completion mask

A mask sent with CPIOCP that is used in masking out the completion returns from the channel control routine (CCR).

## complex constant

A complex constant consists of an ordered pair of real constants or double precision constants, each of which may be signed, separated by a comma, and enclosed in a set of parentheses. The first portion of the complex constant is the real part, and the second is the imaginary part of the complex value.

#### compression

In ICAM, the process of removing nonsignificant blanks from text. Compression is used to shorten messages that are to be transmitted in order to increase line performance.

## configuration

The process by which the available IMS software is tailored so that the resultant IMS package satisfies the needs specified by the user, and reflects the user's hardware and software environment.

#### connect

A routine in ICAM that is common to all handlers and is responsible for line connection. The connect routine issues turn-on and dial commands to the channel control routine.

#### console log

An optional feature of the spooling system, the console log is a log of all messages displayed on the system console and of all operator commands.

#### continuity code

Specifies to CPM/30 whether an activity duration is continuous or broken.

## control field

A field located within a record and containing the information that the program uses to select, omit, compare, and arrange records.

## control mask

A pattern of bits (1, 0, T, and F) associated with a dialog specification language (DSL) array that determines which elements are processed and which elements are ignored.

#### control station

The station (usually a central processing unit) in a multipoint data communications system that controls network traffic by means of polling and selection. On a centralized multipoint network, tributary stations can communicate only with the control station when polled or selected by the control station.

#### control stream

A sequence of control statements that defines one or more jobs to the operating system and may include source code or data as required by the jobs.

#### COP

See communications output printer.

#### CPIOCP

See communications physical input/output control packet.

#### critical path

In ICAM, the path through a network that requires the longest time for completion; more than one critical path can be present in a network.

#### critical path analysis

Monitors the progress of critical paths and the overall network duration.

#### critical path method

The network planning and analysis technique for determining the path with the longest duration time, as well as the floats and slack of events, and activities.

#### CUP

See communications user program.

#### currency status

One of four status categories of a record in a subschema during execution of a user object program as follows: run unit; record type; set; and area. The status is recorded by the currency indicator in the system status information locations.

## current file position

To find a module in a library file, the librarian begins searching at the current position of the file directory and continues until the module is found, or until the end of the file is reached. If the end-of-file is reached, the search begins anew at the beginning of the file directory and continues until the module directory record is found, or until the original current position of the file directory is reached again. (This is not true for gang operations.) The current position being arrived at again signifies no-find for that module on the file being searched.

The current position of a file can be affected by:

- The rest (RES) function
- Any librarian function except the EOD function

The RES control statement can place the current position pointer at the first logical record on the file specified or at the first record in a named module in the specified file.

All librarian functions except EOD affect the current position. When the function is completed, the current position pointer for the processed file is the address of the record immediately following the last record processed.

#### current ID

A field in the partition control appendage (PCA) table that contains the stating address of the logical partition or the address of the current record being processed.

#### cursor

A symbol used to indicate the position of the next character entry on an alphanumeric display terminal.

## D

#### data

A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means.

#### data base

A collection of interrelated data stored so that it is independent of application programs and redundancy is minimized.

#### data base management system (DMS)

A collection of system programs that support the development, manipulation, and recovery of data bases. The languages used to describe and manipulate DMS data bases are derived from the CODASYL data base specifications.

#### data circuit-terminating equipment (DCE)

The carrier's equipment in a public data network.

## data definition record

A record in the named record (NAMEREC) file that contains the description of a defined file and related subfiles and is used by defined record management to access that defined file or those subfiles.

#### data dictionary

A special data base containing the physical and logical record descriptions of a user data base.

#### datagram

A message used in ICAM processing that allows a registered program to optionally pass data or parameters to another registered program.

#### **DATA routine**

See file processing utility routine.

### data set labels

Data set labels describe the types of records that make up a diskette file. Data set labels reside on head 0 and are similar in function to the *volume table of contents (VTOC)*.

## data set delimiters

The /\$ (start-of-data) and /\* (end-of-data) job control statements. The data set within these delimiters may be source code or other job control statements.

#### data structure diagram

A graphical means of showing the set relationships that exist among record types included in a subschema.

#### DCP

See distributed communications processor.

#### DDI

See direct data interface.

## DDP

See distributed data processing.

## decompression

The process of inserting blanks into a text that has been compressed. The insertion of blanks restores the text to its original content.

## default sort

An independent sort/merge operation in which all information is automatically supplied in the absence of sort control statements. All input, output, and work files assigned in the job control stream must be disk files. In a default sort, independent sort/merge takes the *record size, block size,* and record type specifications from the volume table of contents (VTOC) for the input files. If input files are partitioned, the first partition is assumed, and a single partition output file is created. The data records are assumed to be character formatted and to have one sort key field the same length as the record or 256 bytes, whichever is less.

#### deferred user service transient (DUST)

A module activated by nonmessage service requests to control the activity between elements of ICAM and the user program initiating the request. LNEREQ is an example of a nonmessage request.

## defined file

A file constructed by IMS from elements of one or more logical files or a DMS data base subschema. A defined file exists only as a description.

### defined record

A sequence of items obtained from IMS by UNIQUE and other action programs, with the execution of a single function call. It is displayed at the terminal by UNIQUE in response to a single operator command. IMS composes the record dynamically from one or more disk records, according to a user-supplied data definition.

#### demand files

Demand files (used in combination with the READ operation) are files other than the primary or secondary files that can be read during calculation time rather than waiting for the next RPG II program cycle. A demand file can be an input, update, or combined file. It can be processed sequentially, or it can be an indexed sequential file processed randomly by record address or sequentially between limits.

## dequeue

The process of removing entries from a queue.

#### detail time

Detail time is that point during the RPG II processing cycle when the normal calculation and output operations for each data record are performed.

## device assignment set

In OS/3 job control, the set of job control statements by which the user specifies the relationship between his files and the peripheral devices allocated to his job. Every file referenced by the user's program must be represented in the job control stream by a device assignment set. The minimum set comprises at least a DVC statement followed by an LFD statement. A full device assignment set for disk files also requires a VOL, EXT, and LBL statement; tape and unit record files do not use the EXT statement. Printer files may require the LCB and VFB statements.

#### device independent control expression (DICE)

A 4-character sequence found in the text portion of a communications message that can control the function and position of remote terminal devices.

#### device statistics log

A record that keeps a count of various device errors, total messages sent and received, and other device type statistics. The device statistics log is kept in a user's communications control area, maintained by device handlers, and organized by line.

#### dialog

Interaction between a terminal operator and IMS consisting of a sequence of logically related input and output messages. When UNIQUE is used, it begins with an OPEN and ends with a CLOSE or another OPEN.

#### dialog transaction

A transaction that consists of two or more actions.

#### DICE

See device independent control expression.

#### did

Device identification (See RID, SID, DID).

#### direct data interface (DDI)

Interface for remote device handlers under control of a user program.

#### discontinuous binary

A method of coding a numeric field such that each subfield is treated as a distinct binary entity. For example, a 1-byte straight binary field containing 11111111 would have the single decimal value 255; if it were considered to comprise two 4-bit subfields, in discontinuous binary, each half word would represent the decimal value 15.

#### disk

A type of direct access storage device.

#### disk prep

The initialization of a disk pack or portion of a disk pack. Disk prep can include changing the volume serial number, adding or replacing IMPL/IPL, creating a new volume table of contents, and analyzing the surface of a disk for defective tracks. Disk prepping must be performed before a disk pack can be used for storing data or programs.

#### disk sort

Sort/merge procedure in which auxiliary storage is on disk. One to eight disk work files may be allocated for independent sort/merge and subroutine sort/merge. They must be assigned the names DM01,...,DM08 or \$SCR1,...,\$SCR8 on LFD job control statements. WORK jproc calls automatically assign the file names \$SCR1,...,\$SCR8. One to three disk work files may be allocated for SORT3 and they must be assigned the names DM01,...,DM03 or \$SCR1,...,\$SCR3 on LFD job control statements.

## diskettes

A type of direct access storage device.

## display format command

An input/output message structure especially suited for a cathode-ray tube (CRT) type device.

#### distributed communications processor (DCP)

A family of communication devices used as front end processors on System 80s.

#### distributed data processing (DDP)

A computer management concept that gives local managers control over their data and jobs, while at the same time allowing central access to all data. Local computers that normally operate independently are linked together through telecommunications so that an operator on any System 80 computer can access data on any other System 80 computer, or send jobs to it.

## DMS

See data base management system.

## double buffering

A technique useful with OS/3 data management to speed overall processing by overlapping sequential I/O operations with record processing through the use of two areas in main storage for I/O data. It usually involves the specification of two I/O buffers.

#### dualing characters

In a printer's *load code buffer*, alternate characters that the printer will accept to correspond to a given print band location. Specifiable in OS/3 job control via the DUAL keyword of the LCB statement.

#### dummy activity

Shows the relationship of two events when there is no connecting work activity; may or may not consume time.

#### dummy data set

A dummy data set consists of /\$ and /\* job control statements only, with no data set within the data delimiters. Dummy data sets are used with some language job control procedure calls (jprocs).

#### **DUMP/RESTORE**

A system utility that copies your important programs and files (bit for bit) from a disk storage medium to a backup media (either disk, diskette, tape, or streaming tape) as a safeguard against errors. If problems occur, the restore portion allows restoration of the contents back to the same device (or similar type device) for recovery.

#### DUST

See deferred user service transient.

## Ε

#### **EBCDIC**

Extended Binary Coded Decimal Interchange Code.

#### ECB

See event control block.

## embedded data set

Data entered into the system with the job control stream.

## **EMGEN**

The process of generating an emulator.

#### emulator

A program that causes one computer to behave exactly like another computer; that is, the emulating system executes programs in the native machine language code of the emulated system. Emulators are generally used to ease the impact of conversion from one computer system to another.

## end of data ID

A field in the PCA table that contains the address of the last logical record of the partition.

## end of file (EOF)

1. Generally, the logical end-of-file.

- 2. A hardware EOF is a unique marker generated by the hardware to denote EOF.
- 3. A software EOF is a software-generated unique record to denote a logical EOF, which may occur only in the block preceding the hardware EOF.

## end-of-file label group

Same as file trailer label group.

## end of message (EOM)

Last character in a blocked message. In EBCDIC the code is 19<sub>16</sub>.

#### end of text (ETX)

A character that signals the end of text in a blocked message; 03 in ASCII and EBCDIC.

## end of transmission (EOT)

Indicates the end of a transmission, which may include one or more messages, and resets all stations on the line to control mode (unless it erroneously occurs within a transmission block). EOT is also transmitted as a negative response to a polling sequence.

## end of volume label group

Same as file trailer label group.

## ENQ (enquiry)

Used as a request for a response to obtain identification and/or an indication of station status. Transmitted as part of an initialization sequence (line bid) in point-to-point operation, and as the final character of a selection or polling sequence in multipoint operation.

#### EOF

End of file.

## EOF1

In OS/3 magnetic tape, the first label in the *file trailer label group* of a standard-labeled file with an end-of-file condition.

#### EOF2

The second label in the *file trailer label group* of a standard-labeled magnetic tape file with an end-of-file condition.

## EOM

See end of messages.

## EOT

See end of transmission.

## EOV1

In OS/3 magnetic tape, the first label in the *file trailer label group* of a standard-labeled file with an end-of-volume condition.

#### EOV2

The second label in the *file trailer label group* of a standard-labeled magnetic tape file with an end-of-volume condition.

## error detection and correction

A hardware or software system capable of detecting, identifying, and correcting data errors occurring during transmission. Most often, the systems initiate a procedure to retransmit the data in an attempt to correct the erroneous data transmission.

## ETX

See end of text.

#### event

A point in time that represents the end of all preceding activities and the beginning of succeeding activities.

#### event control block (ECB)

A control block that identifies a subtask and indicates status to the other tasks within a job step. An ECB is created for each subtask.

#### exclusive phase

Phases that the linkage editor has determined to be not in the same path (possibly in contention for identical storage).

#### exit

Point at which control is passed from independent sort/merge to a user own-code routine.

#### exit code

Defines the *exit* associated with a specific own-code routine in independent sort/merge.

## extended sequence

Used in ICAM to describe the condition that exists when a device is busy.

#### extent

- 1. A reserved contiguous physical area on a direct access storage device (DASD) volume, defined for disk in terms of tracks and cylinders by means of the starting and ending locations allocated to an individual file.
- 2. A set of contiguous tracks on a disk, assigned exclusively to one file. Several extents may be required to provide space enough for a file. The maximum number of extents any OS/3 data management disk file may have on a single volume is 16; 13 extents is the maximum for a *split-cylinder* file.

## extent table

A table of extents, normally used to define the areas on a disk volume or volumes allocated to a particular file. Synonymous with *extent map*.

## external reference (EXTRN)

Defines the entry point for an object module that is to be linked to the user program in a link edit run. In a subroutine sort/merge program, MR\$ORT is named as an EXTRN in order to build the *sort common module* (*SG*\$*ORT*) into the user load module.

## F

### FCB

See file control block.

## file cataloging

A method of maintaining, in a centralized catalog, all the information needed by a job to access a file that is also common to other jobs. File cataloging also provides protection against unauthorized access or update by using read/write passwords.

#### file compression

The librarian can squeeze together fragmented files (interspersed voided elements), thus providing space at the end of the file for new elements. The compression is automatic if merging or copying involving the file in question occurs. If not, an existing file may be compressed by using certain specific librarian functions. File compression can occur piecemeal within a given librarian job stream. Any associated directories also are compressed in the update job.

## file control block (FCB)

A repository for information required to control a specific file and the device on which it resides. Information in the FCB is compiled by job control from the *device assignment set* of job control statements for the file. One of the six basic control blocks in OS/3, the FCB is input to the OPEN imperative macro.
## file extension

A current library file often can be updated or effectively extended without creating new output file. This may involve replacement of a given element within the file by a new copy of the same element. Replaced elements are flagged as nullified and may be removed via a subsequent file compression operation. Directory entries for replaced elements in extended files are altered accordingly.

## file header label group

In OS/3 standard-labeled magnetic tape files, a pair of required labels following the VOL1 label and followed by the *tape mark* that precedes the data blocks of each file. the first of these is the first file header label, HDR1; it identifies the file and is written at the beginning of each file. It is extended and followed by the second file header label, HDR2. The fields of these labels may be specified in the job control stream. See also *file trailer label group*.

#### file identifier

In OS/3 tape, a field of *HDR1*, *EOF1*, and *EOV1* labels; a unique 17-byte configuration that identifies the file.

## file lock

A facility common to all OS/3 disk data management methods whereby the user may control the extent to which disk file may be shared between tasks and jobs, and the mode in which sharable files may be processed. The user specifies that a disk file is lockable by assigning a 1- to 8-character unique lock ID as a prefix (*qual*/) to the file name through the LBL job control statement. DMS also provides a LOCK/KEY feature for assigning access control keys (that is, the ACCESS-CONTROL LOCK clauses for the DATA BASE FILE command) at start-up time. These access control keys must match the access control locks specified in ACCESS-CONTROL LOCK clauses of the DMCL data division. The LOCK-KEY feature is intended to provide a measure of security on the data dictionary level.

## file merging

The librarian can function in a library file merge mode; that is, one or more library files, module groups, or individual modules may be merged into a new output library (or libraries). Multiple file merging is permitted and the number of files involved is a function of the user requirements. The librarian can merge up to six files concurrently (including output files).

Reference to a seventh file (or more) causes the first file (and any succeeding files) to be reopened whenever a new, interspersed file reference is detected. The merging of multiple files beyond a sixth might necessarily be on an exclusive, rather than inclusive, basis.

## file name

The name of the logical file. It is specified in the LFD job control statement and may have up to eight alphanumeric characters. It is the logical file name used to access a file and to locate the FCB block for a file.

## file placement analyzer (FIPLAN)

A tool used to plan the placement of files in order to improve the performance of your files on disk. It accomplishes this by analyzing your existing disk file placement and recommending (via printed reports) new placements to provide more efficient file access.

## file position

See current file position.

## file processing utility routine

Provides the capabilities of transferring files between the various peripheral devices, editing or correcting data files, and comparing files. All information concerning file processing is submitted through a job control stream by means of statements that describe the files and the type of processing to be accomplished. These statements enable you to compare files or selected areas of a file, delete or insert records, copy existing files onto any storage device available to the system, rearrange records, or produce a printed copy of any file. The program name is DATA.

## file sequence number

Indicates the position of the file when several are on a tape volume. Specified in the fifth positional parameter of the job control LBL statement; used by data management in positioning the tape to the correct file. Contrast *file serial number*.

#### file serial number (FSN)

Identifies each volume as a member of the file. The file serial number is identical to the volume serial number of the first volume of the file. Specified in the second positional parameter of the job control LBL statement for checking or creating by data management. Contrast *file sequence number*.

## file symbiont

A self -contained program that executes in the system. It reads control streams from the input device and permanently stores them in \$Y\$JCS. No validity check is made at the time a control stream is stored in \$Y\$JCS. The file symbiont is activated by the FILE operator command at the system console.

#### file trailer label group

In OS/3 standard-labeled magnetic tape files, the file trailer label group comprises either of two pairs of labels, depending on whether the reel contains an end-of-file or an end-of-volume condition. In the first condition, the first label of the pair is the EOF1 label, identical in format to the file HDR1 label; the second label is the EOF2 label. Its format is identical to the file HDR2 label. In the end-of-volume condition, these labels are the EOV1 and EOV2 labels; their formats are identical to their counterparts in the *file header label group*, HDR1 and HDR2. Synonymous with *end-of-file label group* and *end-of-volume label group*.

## file window

The component of a Pascal file that is currently visible to the program.

#### FIPLAN

See file placement analyzer.

## first character control

A method for specifying line spacing or skipping when a printer file is printed, by including a control character in each record of the file.

## fixed-sector disk

A disk subsystem preformatted by definition prior to file open, and not automatically by data management.

## flag

A 2-value indicator.

## format label

Any of a series of seven standard disk labels, contained in the *volume table of contents*, that describe a particular volume or the files residing on that volume. Any format label may be retrieved with the disk space management OBTAIN macro.

#### FORTRAN

FORTRAN (from FORmula TRANslator) is a programming language designed for extensive use in mathematical, scientific, and technological areas.

## functions (FORTRAN)

Functions are procedures referenced in expressions within FORTRAN statements. They always have at least one argument; they always return the value associated with their name when they are executed; and they return control to the expression within the referencing statement. Standard library functions and intrinsic functions are supplied by Unisys. Statement functions and external functions are coded by the user.

# G

#### gang operations

Certain functions of the librarian are operable in gang mode, in that types of code may be copied/punched/displayed (COP), deleted (DEL), added (ADD), compared (COM), or renamed (REN) as a group. These options are initiated via command statements and the omission of the NAME parameter (or NAME and TYPE parameters) in the operand field.

When the gang mode is initialized, the referenced file is scanned from the current position for the code set type designated (unless all modules are being scanned). When a module of the type indicated is detected, the requested operation commences. Unless this preselected requirement is met at least once, the operation is aborted.

## gangpunch/reproduce utility routine

This routine provides the capability for gang punching a data field from a master card into an output file or reproducing all or selected fields of a record into an output card. Also, fields in the output record can be relocated.

#### global network

A network that permits multiple programs to share resources of a network (lines, terminals, and files) and allows you to statically or dynamically alter resource assignments.

## global user service task (GUST)

A program that controls all resources of a global network, such as loading the ICAM network and handling the status of communications lines.

## group

A set of modules existing within a specified library file that may be handled as an entity by the librarian. Such module sets may be composed of mixed or nonmixed program elements. There may be many groups of the same name in a given library file.

## group management

Library files may contain mixed module types; that is, object code, load code, and source-level code can be intermingled within a given library file. The librarian can process the elements in a file individually or by groups. Using the appropriate gang operation, the librarian can service module groups of the same or different type through specific functions. Gang operations allow servicing of all modules of a specified type within a given library or all modules regardless of type within certain designated file limits. For library management, groups may be handled as specified entities by using the library group reference method.

## GUST

See global user service task.

# Η

## hard copy command

An input/output message structure especially suited for a teletypewriter device.

#### HASP

See Houston automatic spooling program.

## HDR1

In OS/3 magnetic tape, the first label in the *file header label group* of a standard-labeled file.

## HDR2

The second label in the file header label group.

## header

That part of a message containing the information for controlling and directing the text portion of the message in its various routings (destination and/or process queues).

## Houston automatic spooling program

A software system that interfaces a System 80, functioning as a remote batch processor, with an IBM host processor.

## 

## ICAM

See integrated communications access method.

#### IDES (ICAM device emulation system)

Permits use of the system in extended tasks through emulation of remote terminals.

#### image code

See column binary.

#### immediate return line

A control character in an activity request packet that causes transfer of control immediately to the user program.

#### imperative macroinstruction

A macroinstruction that generates machine instructions and may be executed subsequently to establish linkages or to perform processing.

The format of the file-processing imperative macroinstructions included in the user program to communicate with data management transient routines and logical IOCS modules is:

[name] XXXXXX yyyy,...,zzzz

A symbolic name may appear in the label field and may have a maximum of eight alphanumeric characters, but it must begin with an alphabetic character. The operation field contains the mnemonic macro call. Positional parameters must be coded in the specified order in the operand field and must be separated by commas. Except for omitted trailing parameters, each parameter not coded must be represented by a comma. General registers may be specified to OS/3 data management imperative macros by coding the register number in the proper position, with or without parentheses.

## IMS

See information management system.

## inclusive phase

Phases that the linkage editor has determined can be in main storage simultaneously.

## indicators

Indicators are used to condition the execution of an RPG II program. They can be used to specify:

- If a file is to be used during the execution of a program
- When calculations and output are to be performed
- When a field in a record is available for input
- The conditions that must be present before a calculation can be performed
- The conditions that must be present before a complete record or field within a record can be written

## information management system (IMS)

A software product facilitating the development and installation of online, transaction-oriented/data base management applications under OS/3.

## initial program load (IPL) volume

A disk pack (commonly called the SYSRES device) that contains the initialization procedure that begins the operation of the operating system.

## inline return

Register 14 contains the inline return address in OS/3 data management.

## input/output control system (IOCS)

Generally, any set of macroinstructions and routines that facilitates I/O operations, or simply, OS/3 data management. See also *physical input/output control system* (*PIOCS*).

## integrated communications access method (ICAM)

A generalized software package and set of prescribed procedures affording the programmer multiple levels of interface to remote devices and data files/queues.

## integrated peripheral channel (IPC)

An I/O channel that is an integral part of the processor. It coordinates all of the information transferred between main storage and its attached unit record subsystems.

## interactive environment

Communicating directly with the computer through a workstation.

## interactive mode

In ICAM, a means of communicating with a terminal. Each output message is followed by a poll and each input message is solicited by a poll.

#### interactive services (IS)

The portion of the operating system that allows you to communicate with the system through the workstation. You can use the workstation to write a source program, compile it, and debug it; you can create a job control stream to run the program; and then, you can run the debugged program using the job control stream you created.

#### interface

The logical unit (hardware or software) functioning as the interconnecting link between two systems or devices of different characteristics. For example, a data communications subsystem forms the common boundary between the modem and the input channel to a computer.

#### interlace

A technique whereby blocks on a partitioned file are spaced on the track so that more than one I/O operation may be performed per disk revolution. The interlace factor is specified by the LACE keyword parameter of the PCA macroinstruction.

#### internal sort

Accomplished in main storage without the use of tape or disk work files. An internal sort is performed when work files are not assigned in the job control stream.

## interprocess control (IPC)

A DDP facility that manages the connection and disconnection of paired processes and (optionally) permits the data they exchange to be synchronized and controlled. Since the IPC is the user's interface with the DDP network and its facilities, the user must follow the IPC protocols.

#### interrupt

The means by which the central processor temporarily suspends execution of one task to perform another. Interrupt processing gives a computer the power to carry out simultaneous operations and still recognize priority conditions, thereby increasing the overall efficiency of the system.

#### interstep processor

Performs end-of-job functions and final housekeeping duties required at the end of a job step, including the release of devices not required by the remaining job steps in the job; release of temporary and user-specified disk space; pertinent logging data; calling the job step initializer (if it is not the last job step); and calling the job termination function (if it is the last job step).

## intrinsic function - FORTRAN

A procedure used, for example, to determine the absolute value of an argument or to get the real part of a complex number.

## inverted print

With inverted print, the use of commas and decimal points is reversed; the comma is used as a decimal point and the decimal point as a comma. For example, \$3,600.42 would appear as \$3.600,42.

## $\mathbf{IS}$

See interactive services.

## island code

Closed routines by which you may handle interrupts, contingencies, or events not normally processed by the supervisor. These island code routines are activated when your program is interrupted for:

Abnormal termination

An error occurs, making continuation of the program impossible.

Interval timer

The time interval previously specified by a SETIME macroinstruction elapses.

Operator communications

An unsolicited message is entered at the system console by the operator.

Program check

An operation in the problem program causes a hardware program check interrupt, such as an addressing violation, an arithmetic overflow, or an operation exception.

# J

job

A total processing application comprising one or more processing steps. Each job is divided into job steps (programs) that are executed serially. With the exception of disk space, resources are allocated on a job basis.

## job control

Nonresident software routines that manage computing system resources, prepare programs for execution, and initiate program execution.

## job control stream

A series of job control statements or procedure definitions that define a job and direct its execution.

#### job dump

Writing the contents of the job region in main storage to an external medium (for example, a printer) for use in connection with debugging.

#### job log

An optional feature of the spooling system, the job log is a log for each job run of accounting information, system messages, job control statements, user snap dumps, and user cancel dumps.

#### job preamble

A region of the job prologue.

#### job prologue

Area reserved at the beginning of the job region in main storage that includes the job preamble, any extent request tables, the task control blocks, open file table, and job accounting table.

#### job queue

Contains an entry for each job defined and stored in a \$Y\$RUN file. The entry is filed according to one of three priorities: normal, high, or preemptive.

#### job region

An area in main storage reserved for each job, containing the control information (prologue) and the program code for the job step being executed.

#### job run library file

The default job temporary library for most systems processors to use for input/output storage. The file identifier for the temporary job run library file is \$Y\$RUN.

#### job scheduler

Schedules job for execution based on a 4-level priority queue. The priorities are low, normal, high, and preemptive.

#### job step

The unit of work associated with one processing program. A job step is an executable program consisting of one or more tasks and requiring a specific amount of the hardware resources of the system.

## job step initializer

Prepares a job step for execution by allocating devices for the job step, locating and updating the file control blocks for a job step, posting the disk address of data in the job preamble, setting option indicators, requesting disk space allocation or file extension, storing system logging information, performing any requested utility functions, and performing housekeeping and bookkeeping functions for the job step as required by the system. The job step initializer terminates when a program is brought in for execution.

## job termination

Either the normal or abnormal end of a job. Terminations result in the deallocation of all system resources (such as peripheral devices, main storage, and disk scratch area) previously allocated to the job. Any remaining data images or control statements in the control stream are bypassed.

## journal

A historical file of complete messages or message segments that is kept by the user's message processing procedure specifications through the use of the JOURN macroinstruction.

## jproc call

Generates a series of job control statements. The job control statements can be tailored to suit specific needs through the use of optional parameters and an optional label field. The format of a jproc call is:

//[label] jproc call [parameter-1,...,parameter-n]

## jproc definitions

A series of job control statements and procedure directives that allow user-defined jprocs to be written and called.

## jproc module

A set of one or more job control statements organized in a specific manner (as dictated by the job control processor) and used as input to the job control run processor.

## jprocs

Job control procedure calls. Jprocs generate the job control statements needed to perform specified functions.

# K

key field See control field.

## KSR (keyboard send and receive)

A telecommunications industry standard for a terminal device that produces a typewritten copy of the message to be sent or received. A number following the letters KSR identifies a specific model equipped with certain features or charcteristics.

## L

#### label standard level field

In ASCII magnetic field labeling practice, a field occurring in the VOL1 label. When writing ASCII output tapes, OS/3 data management writes "1" in this field to indicate that the tape is in full compliance with American National Standard Magnetic Tape Labels for Information Interchange, X3.27-1969.

On input tapes, a "1" in this field ensures correct processing; tapes created under later versions of the ASCII standard may also be accepted, but the user is not assured of correct processing.

#### latency

On disk, a time delay occurring between the positioning of a read/write head for a read or write operation and the arrival of the desired block or the track area sought under the head for that operation. Latency is a function of the rotational speed and the radius of the disk; it always exceeds the time delay for electronic head switching and is always less than *seek time*.

#### lacing records

A technique used to minimize latency of disk access by specifying an offset between logical records. By lacing your records properly, you can space the records on the track so that each logical record is rotated under the read/write head just as the I/O order to retrieve it is issued. As a result, you can access a number of records without loss of a disk revolution.

## length attribute of expressions

An attribute that is determined by the assembler and is a function of the leading term of the expression. If the first term of an expression is an absolute value, a length attribute of one byte is assigned to the expression. If the leading term is a symbol, the number of bytes attributed to the expression is the same as the length attributed to the symbol. Thus if TAG appears in the label field of an LH (load half word) instruction, it would have a length attribute of 4 since LH is a 4-byte instruction. In referencing the same label, the expression TAG+195 also has a length attribute of 4, but the expression 195+TAG has a length attribute of 1 because the leading term is a decimal self-defining term.

## length attribute of symbols

The number of bytes assigned to the instruction, constant, or storage area involved. For example, the label of a 2-byte instruction has a length attribute of 2, and the label of a DS statement reserving 200 bytes would have a length attribute of 200. Symbols equated to location counter references or absolute value representations usually have a length attribute of 1. The duplication factor (constant or storage area) has no effect on the length attribute.

The maximum length attribute that can be generated by the assembler is 256 bytes; however, a DS may be used to reserve more than 256 bytes of storage.

The length attribute of a symbol may be referenced as a term in an expression by writing L' followed by the symbol. Thus if the symbol STOREND is the name of a full-word field, L'STOREND would be considered a term and would have a length of four bytes.

## lexical tokens

The building blocks that form a Pascal program. During compilation, there is a lexical scan that transforms the source text of the program into lexical tokens. The lexical tokens used to construct Pascal programs are classified into special symbols, identifiers, directives, numbers, labels, and character strings.

## librarian

A program used to manage system and user libraries containing the modules making up the program environment for a given system.

## library file

A specific set of programs residing within the physical limits described by an appropriate file label present in a volume table of contents. Library files are herein distinguished from data files in that they are composed only of program elements. A library may be composed of multiple library files.

#### line

A hardware line is a dedicated or switched telephone communications path between two modems. A software line is the part of a message that can be displayed by a device at the same horizontal position. An input line is defined as that part of a message which is enclosed by return characters or is a card image.

## line control table

A table of entries, created by execution of the ICAM LINE macroinstruction, used for controlling and processing message traffic to or from the associated line queues.

## line working area (LWA)

Working storage that contains flags and printers necessary to control the line.

## linkage editor

A program that enables you to convert and combine object modules or object module elements produced by the language processors into load modules that the supervisor can load into the system for execution.

## load code buffer

A buffer, located in the printer, that allows the user to specify any 8-bit code for any graphical symbol on the print band or drum. In OS/3 job control, the load code buffer is loaded by the user via the LCB statement, which allows him to specify a unique load code and to override the default system standard at his installation.

#### load module management

Load modules generated by the linkage editor also can be managed by the librarian. The facilities provided for load module management are much the same as those provided for object module management, except that specific load module phases may be patched. Applied patches are inserted at the end of the designated phase. Load modules also may be listed, punched, filed, and renamed. Load module listings are hexadecimal printouts of load module records. Load elements may be serviced via all standard library functions. Phases within a load module also can have an alias phase name, which was given to it at link-edit time, in addition to the phase name assigned to the load segment. This alias phase name also can be renamed by the librarian.

## location mode, DMS

Defines the way in which a given record type is stored in the data base and specifies one of the ways available to access an occurrence of that record type. The four location modes are: DIRECT, CALC, VIA set, and INDEX sequential.

Once specified, this location mode restricts the type of DML statements that apply to that record type. Any given record type can have only one location mode.

#### lock facility, IMS

A system of protecting records (locking them) from access by other programs while your program is updating them. IMS releases the record locks at the end of each action. See *file lock*.

## logical file name

As viewed by the librarian, it is a type code (T=tape, D=disk) and a number (0-15). This symbolic name identifies all files referenced within the librarian control stream. This name is normally used to identify a file and is equated to a logical file name at the beginning of each librarian run.

#### logical unit number

A number preassigned to a unit by device type and characteristic at each installation. This number is used to access an entry in a control table. The control table contains information about the type of device being assigned, plus information regarding the use of that device.

## LRC

Longitudinal redundancy character; same as BCC (block check character).

# M

## machine/program check

The hardware interrupt generated when a particular type of hardware or software error occurs.

## macro

A method of generalizing a set of instructions, a program, or a routine that can be particularized for a given application by selecting a series of optional parameters.

## macro definition

A formalized pattern of code written once if a certain series of instructions (e.g., a routine) is needed more than once in a program or associated programs. The macro definition may be stored in a library for later use or submitted for assembly with the source code deck.

Macro definitions may be prepared in one of two separate formats: macro or proc. The elements of the macro and proc format types may not be mixed within a macro definition; however, macro definitions of both types are permitted within a program. Macro definitions contained in the source program may be preceded only by comment statements and the following assembler directives: ICTL, ISEQ, TITLE, SPACE, EJECT, and PRINT. Any of these directives except ICTL may appear between macro definitions. A macro definition within a macro definition (nesting) is not permitted in either the macro or the proc format.

## macroinstruction library

A system library (\$Y\$MAC) that contains the macroinstructions provided with your system.

## main storage allocation/requirements

The assignment of blocks of main storage to jobs and system functions (// JOB statement). The minimum mount of space need be only that required for the largest load module in your program. Job control calculates how much additional space is required for the various control tables. This establishes the true minimum amount of main storage your program uses during its execution.

## main storage consolidation

The repositioning of jobs in main storage in order to run a job requiring more contiguous space than is currently available.

## mapping facilities

Each time the librarian is executed, a map of the functions it performs is output on the system printer for the user. The map normally includes:

- A listing of all the librarian control statements processed
- A printout of all the header records processed
- Any appropriate diagnostic messages

Additionally, the map can include:

- Source module listings
- Object and load module listings
- Module correction results (insertions versus deletions)

The map normally reflects the state or content of the output library files if one or more were produced; otherwise, it reflects the state or content of the input file serviced by the respective librarian function. In comparison functions, discrepancies are listed one above the other on a record-by-record or block-by-block basis.

## matching records, file processing

Multiple input files can be processed as one large sequential file with RPG II by using matching records. The sequence in which the records on the individual files are selected for processing is controlled by specifying matching fields for each of the files involved. The fields are compared and the values they contain govern which record is selected.

#### MCP

See message control program.

## MCT

See message control table.

## merge-only process

Combines two or more previously sorted files into one output file in the same sequence as the input file. The initial sort and preliminary merge operational phase are bypassed.

#### message

The binary-coded data or information exchanged over communications lines between two or more terminals. A message usually is composed of three parts:

- 1. Header may contain any or all of the following: data source, destinations, timing, date, routing, transmission signals, and synchronization controls
- 2. Body the data or information to be communicated
- 3. Ending a control character to indicate end of message

## message control program (MCP)

A high-priority system task which has the important function of supervising and managing communications facilities in response to user demands upon those facilities.

## message control table (MCT)

An activity request packet for ICAM direct data interface and higher level interfaces.

## message logging

The process of recording message activity in a history file that can later be used by accounting and diagnostic routines.

## message processing procedure specification (MPPS)

A set of macroinstructions that the user specifies in a given sequence for analyzing and controlling incoming and outgoing messages on a line or lines, provided the messages contain the same characteristics.

## message processing program (MPP)

A program written by the user to process and direct the message traffic in and out of the ICAM. Also referred to as a *communications user program (CUP)*.

## message retrieval

A means of accessing a message, other than the next message available for processing, after it is placed in a queue.

#### message switching

The general classification of a switching system in which the destination addresses of messages are included as a portion of the message itself (normally the leading character, or header).

## message user service task (MUST)

An interface service, activated by GETCP/PUTCP requests, to control the transfer of data between ICAM elements and the user program.

## microcode file (\$Y\$MIC)

A file provided with the release that allows you to tailor your system (device types/modes and device addresses) when a release level is installed.

#### mismatch character

In a printer *load code buffer*, a specification of the character to be printed when a data byte is transmitted that is not in the load code. Specifiable in OS/3 job control via the MISMCHAR keyword of the LCB statement.

#### modem (data set)

An instrument used by the common carrier to modulate communications signals, transmit them, and to demodulate the signals when receiving them.

#### module

A segment of hardware or software that is, in itself, a separate and complete logical entity but is normally combined or linked with other modules before it can operate functionally. As an example, an assembler turns out an object module that usually is linked with other object modules to form a load module that becomes the executable program.

## module gang mode

When gang operations are to be processed on modules of a specified type, the module name is omitted and the type positional parameter is set as follows:

- S For source module
- P For proc module
- O For object module
- L For load module
- M For macro module

By setting the type as shown and by omitting the name, the user instructs the librarian to perform the designated operation on all modules of the type specified from the current position of the library file up through end-of-file.

## module group

A group of one or more source, proc, object, or load modules that are prefixed with a beginning-of-group demarcator record and an end-of-file sentinel record or end-of-group demarcator. Like a module, a module group may be treated as a single entity by the librarian.

## monitor

A supervisor routine that interrupts each instruction in a program, or a part of a program, so that a trace of program execution can be made.

## monitoring

The action of reporting various conditions at selected decision points in device handlers. The conditions reported are kept in a monitor area accessible by a maintenance program. Monitoring is performed while the handlers are servicing their various devices.

## MPP

See message processing program.

## MPPS

See message processing procedure specification.

## multijobbing

The concurrent scheduling, loading, and execution of more than one job at a time. Up to seven jobs can be processed concurrently, with each job consisting of one or more job steps.

## multipartitioned file

A disk file may be divided into a maximum of seven partitions. Only one partition from each input file can be sorted; however, additional partitions from the same file can be sorted by redefining them as separate files in the job control stream.

## multiphase load modules

Multiphase load modules are constructed by a programmer to minimize the main storage requirements of a program. They consist of more than one program segment, with each segment being a phase that may be loaded into main storage and executed individually as required by the logic of the program. Each phase of a multiphase load module is composed of individually assembled and/or compiled sets of code that may be thought of as a program subroutine. Further, each phase in a multiphase load module can be made to overlay one or more previously executed phases in main storage.

The main storage location at which a phase is loaded is called a node point. All the phases in a multiphase load module, excluding the root phase, are loaded in main storage at a node point. Node points and phases are defined through the linkage editor OVERLAY and REGION control statements.

The INCLUDE statements following an OVERLAY or REGION control statement identify the object module elements that are to comprise the phase. Ignoring the root phase, the number of phases in a multiphase load module coincides with the number of OVERLAY and REGION control statements present in the control stream that caused its generation. The root phase of all load modules is initiated with the initiation of the load module, normally in response to a LOADM control statement.

## multiregion load modules

Multiregion load modules are basically the same as multiphase load modules, except that a multiregion load module is so constructed that the origin of the first phase of each region is at the end of the longest path defined in the previous region, rather than at the end of the phase previously defined. This feature prevents the phases in one region from overlaying any portion of a phase in any other region.

In general, a load module constructed as a multiregion load module normally requires more main storage space for execution than the same program configured as a multiphase load module. Multiregion structures are most useful, however, when a need exists for a phase to reside in an area where it will not be overlaid by other phases that may not be directly associated with it. Also, it is sometimes possible to realize an actual saving in main storage space with a multiregion construction when one or more control sections are required for two or more distinctly separate phases but are not required by other phases. In this case, these CSECTs could be placed in a separate region, rather than being embedded in a phase common to the phases requiring them. Placing them in a common phase could unnecessarily affect the origins of succeeding phases even though the majority of these phases do not require these CSECTs. The opposite is true when these CSECTs are placed in a separate region. Region origins always are assigned at the end of the longest path of the preceding region, and unnecessary placement of CSEDTs in separate regions may have an adverse effect on the overall length of the load module.

Regions are declared by the programmer with the REGION control statement in much the same way a phase is declared with an OVERLAY control statement. Both statements initiate construction of a new phase at some symbolic starting address, or node point, specified in the control statement. The only difference between the two statements is the way they cause the linkage editor to assign an origin to the phase being created.

#### multitasking

The concurrent processing of many tasks asynchronously. Multitasking applies to the switching of processor control among two or more tasks on a priority or rotational basis. Job steps with more than one task are capable of using multitasking.

#### multithreading

In IMS, a technique for managing one ore more independent threads concurrently by interleaving their execution. When a thread (unit of control) must wait for the completion of an event, control is given to another thread which is ready to execute.

#### MUST

See message user service task.

# Ν

## named record file (NAMEREC)

An IMS file that contains password definition records. The password definition process provides security for all your data files when you use UNIQUE.

## network

A collection of hardware and software components that are linked together, physically and logically, and which interact according to some control scheme. The function that a network yields is determined by the types of cooperating application systems that exist in the network.

## network queues

A set of queues that supports your terminals (output queues) and your programs (input queues). Physically, they consist of a set of messages linked together in the network buffers.

## node

A connecting point in a network where arrows begin and end.

## node point

The starting, or origin, address of each loadable phase (which also is the terminal address of a previous phase), or the address of a definition in the same path of a phase.

## nonreentrant code

Code that is self-modifying. Consequently, only one copy of this code may be executing at any one time. If more than one execution is occurring simultaneously, the code will not produce the desired results because one execution path will be using information pertinent to another execution path.

## NTR

A system utility operating through ICAM to enable remote batch processing of a Series 1100 system. The utility permits type-in operation for standard reader, punch, printer, and device-dependent peripherals, as well as user own-code programs to handle device-independent peripherals such as tape and disk.

## nullified module

A module logically marked for future physical deletion by the librarian. A nullified module cannot be accessed by either system or user programs.

# 0

## object module management

Language processor output modules can be maintained by the librarian, in that object code can be patched, listed, punched, filed, and renamed. Specific CSECTs or ESDs also may be renamed. Patch corrections are inserted at the end of the object module. Listings of object modules are hexadecimal printouts of object records. All standard librarian functions regarding module manipulation apply to object elements.

#### online diagnostic and maintenance programs (OLMs)

Programs designed to be used by maintenance engineers to diagnose malfunctions in the peripheral systems supported by OS/3.

#### on-line transfer utility (OLTRAN)

A utility program that enables the transfer of ASCII files between a Unisys PC and a System 80.

#### overlap processing

On disk, the ability to read a physical record into one I/O area while retrieving records from another I/O area or work area; conversely, to write a physical record from one I/O area while reading records into another I/O area or work area.

#### own-code routine

A user-provided routine for performing a specialized function other than the normal OS/3-supplied operations.

# Ρ

#### Pascal

OS/3 Pascal programming language complies with the requirements of ANSI/IEEE770X3.97-1933 with the following exception: Files are not allowed to be variant fields of records, nor are they allowed to be within such fields.

#### password

A means of verifying the right of a user program or a terminal operator to access a computer system or files associated with the system.

#### patching

A process through which corrections are made to object and load modules. The patches are inserted into the module being corrected just after the last current text record and just ahead of the transfer record. Then, when the appropriate load module is loaded into main storage, or the object module is linked, the new text is inserted in the appropriate place in the module, overlaying the old text.

## **Glossary of Terms**

## path

A route through a network following contiguous activities or events.

## PCI

See program controlled interrupt.

## PCTRAN

A PC file transfer utility provided with the System Service Programs (SSP) that permits the transfer of data files, library modules, and source program files between disk or diskette on a PC and disk, diskette, or tape on a System 80.

## PDN

See public data network.

## phase dependencies

Whenever a phase is in main storage or is being loaded in main storage, all the phases in its path from start of module or from start of region also should be in main storage. Phases may be loaded in any numerical sequence whatsoever, excluding the root phase, and reloaded any number of times, as required by the logic of the program. The assigned location of the phases has no bearing on the order in which the phases are executed. Any part of a phase that is modified during its execution will remain so only until the phase is overlaid.

#### phase names

Phase names identify the various phases of a load module when they are loaded in main storage for program execution. (Programmers who wish to do their own program loading, rather than have the automatic overlay region control mechanism of the linkage editor embedded in their load module, must reference a phase name in a FETCH or LOAD macroinstruction whenever a phase is to be loaded for execution.) Each phase is automatically assigned a name by the linkage editor. This name is based on the name assigned to the load module by either the programmer or the linkage editor. An alias phase name also may be assigned to each phase through the OVERLAY or REGION control statement that causes its generation. The assignment of alias phase names allows the programmer to reference the phases of a load module in his subroutines or phases, without knowing the order in which the phases will be defined in the linkage editor control stream. The linkage editor automatic overlay control mechanism always refers to the linkage editor generated phase names.

## physical input/output control system (PIOCS)

A set of resident routines that controls the activity between the processor and all peripheral devices connected to the I/O channels.

## physical unit block (PUB)

A control block in main storage for each I/O device containing the physical address, characteristics, status, and other control information for the device. The PUBs list in main storage contains the peripheral device information used by the *physical input/output control system (PIOCS)*.

## PIOCB (physical input/output control block)

A buffer reserved in main storage into which the FCB information for a file is stored by the supervisor.

#### plateau control

Provides coordination between different levels of hardware, software, microcode, and microcode products. Plateau control is used during migration and identifies supported plateaus and corresponding microcode levels.

#### pointer type

A Pascal data type that is used to describe the locations of dynamic variables (variables that the standard procedure NEW creates during execution of a program).

## POLL

The message sent to a terminal or group of terminals to solicit the input or the status from that terminal.

#### polling group

A group of terminals that can be accessed by a general poll since they have the same RID.

#### preamble

The portion of the prologue in the job region containing control information for a job.

#### preamble SEXTRN processor

A piece of code that resides in the user prologue that completes the transfer of control from a program to a shared code module outside the program. The SCON value in register 15 is converted to the machine address of the shared code ENTRY. The shared code routine is given control exactly as if it were included with the calling program. The contents of the 4-byte SCAN in main storage is not altered during this process; only register 15 is altered.

## pre/post queueing

An action performed by the *message user service task*. It concerns the collection (prequeueing) of text segments into a complete message before giving the message to the communications network controller for destination or process file queueing. Post queueing is the removal of text segments from a queued message.

## privileged instructions

Instructions used by the operating system when the processor is in the supervisor state. If an application program (user program) attempts to execute a privileged instruction, a program exception interrupt will occur because the processor will be in the problem state.

#### proc

Short for *procedure*, a proc's function is identical to a macro's function; their formats, however, differ slightly.

## procedure

A procedure is a sequence of statements that can be coded once and then referenced each time a calculation or series of calculations is to be performed. A procedure may be referenced by a function reference or by a subroutine CALL statement.

## program controlled interrupt (PCI)

One of the three interrupt conditions that cause control to be passed to the program check island code routine. This interrupt is used to indicate that a buffer is exhausted, either empty or full, or that an additional buffer may be required to continue processing a message.

#### program name

The name of a program that is to be executed in a job step. This is the name given to the load module by the linkage editor.

## program phase (load module phase)

A program segment that can perform one or more specific processing operations. A program phase is output by the linkage editor and stored in a load library, then located and read into main storage by the program loader routine.

## program source module

A set of one or more source code statements used as input to language processors or as data for a user program.

## program status word (PSW)

A field in main storage that contains an instruction address and control information for the program currently being executed. When an interrupt occurs, the supervisor stores the PSW in a PSW area, suspends the task, processes the interrupt, and then uses the stored PSW to resume the interrupted task.

## prologue

The portion of the job region containing the preamble, TCBs, and disk storage extent control information for a job.

### protected format

A feature that provides a means of protecting selected data on a terminal from operator alterations. In other words, there are character fields that are protected and cannot be altered.

## PSW

See program status word.

## PUB

See physical unit block.

#### public data network (PDN)

Data communications services that can be used by any organization that is willing to subscribe to the service. Two types of PDNs are supported by ICAM; packet-switched and circuit-switched.

# Q

## queue, delayed

A queue permitting messages to be queued but inhibiting the queue from being used as a data source, regardless of the destination of the messages.

## queue, intercept

A queue assigned to a particular terminal because the terminal is temporarily overloaded and cannot accept more traffic. The terminal would retain exclusive use of the assigned queue for the time it remained overloaded. Traffic for active terminals using the original queue can continue to have messages processed.

## queueing

The sequencing of messages in a storage medium.

#### queueing, line

Assigning messages to a specific line queue serving one or more terminals.

#### queueing, message

Staging and linking message segments in a main storage or a disk storage area associated with a designated CCA.

## queueing, priority control

A control permitting messages to be processed in a sequence other than in the sequence of arrival in the system.

## queueing, terminal

Assigning messages to a specific terminal queue identified by a unique terminal parameter specified in the terminal table.

## quick-before-looks file

A SAT file (assigned for use with automatic backward recovery of DMS) for each data base that contains the *before-looks* for all updating run units.

# R

## RBP

See remote batch processing.

## real constant

A real constant consists of a string of digits that may be preceded by a sign, blanks, or zeros and may be followed by the exponent notation, E, followed by a signed integer constant. The string of digits may include a decimal point.

## record

A collection of related data or words treated as a unit. The record size must not exceed block size.

## record descriptor word (RDW)

In variable-length record format, the first four bytes of each logical record, the first two bytes of which contain the length of the logical record.

## record interlace

A technique that reduces the effects of rotational delay when processing partitioned files, that are accessed sequentially. During file creation, the interlace function arranges the physical records (blocks) in the file so that several blocks can be accessed during one disk rotation.

#### recursion

The process involved when a Pascal routine calls itself.

#### region table

A table created only for load module structures that describes the number of regions making up the load module and the highest phase contained in each region.

## remote batch processing (RBP)

Type of processing where batch type jobs are submitted (and optionally receive back output) from a remote site card reader, printer, or punch.

## remote device handler (RDH)

A program to control and direct message traffic being sent to and received from terminal devices sharing a common set of characteristics.

#### remote identification (RID)

See RID, SID, DID.

#### Report Program Generator II (RPG II)

RPG II is a processing language that generates an object program from a series of interrelated specifications. Through the various RPG II specifications forms, records can be defined and the operations to be performed on these records are indicated. Each record is then processed by the same RPG II program cycle, and the userspecified operations are performed as specified conditions are satisfied.

## resident subprogram

A user-written program residing in main storage, called by an action program or another subprogram and returning control to the calling program.

#### resource

A reentrant load module that is needed by a nonreentrant load module for its proper execution. The operating system schedules the nonreentrant load module when the resources (reentrant load modules) are available.

#### resource number

A number, unique to each load module, that is assigned to each resource record by the linkage editor.

#### resource record

A record produced by the linkage editor that names a shared module required for the successful execution of the load module being created. There may be several resource records per load module.

## response timer

The time, set by hardware or software timers, in which a reply or a response is expected to an inquiry or other message transmission. Expiration of the response timer usually results in the execution of a procedure for dealing with an abnormal condition.

#### restart

To resume processing, a job from some intermediate point (called a checkpoint or recovery point) follows an interruption. A tape sort can be restarted through use of the RESUME parameter; a disk sort cannot be restarted.

## RID, SID, DID

A hierarchy or series of identities, structured to indicate a unique sending and receiving terminal in a telecommunications network. RID is the remote identification of a certain group of terminals; SID is the site identification of a terminal in the group; and DID is the device identification of a particular device available to the terminal.

## **RLD mask**

An object or load module relocation mask used to specify text modification.

## rollout/rollin

The temporary transferring of jobs from main storage to disk, to make room for a job with a preemptive scheduling priority.

## root phase

This phase is the first order of storage allocated to a load module.

## root segment

The root segment controls the phases and the order in which they run as specified by phase 0. The root segment contains common constants and subroutines used by more than one phase and storage space for information being passed from one phase to another.

When the routine is executed, control is passed to the root segment. The root segment passes control first to phase 0 and then to the other phases. When a phase is completed, control always is returned to the root segment.

#### route

The path that a message or data follows from the point at which transmission begins, until the arrival at a final destination.

#### run symbiont

A self-contained program that executes in the system and identifies, interprets, and analyzes the statements in a job control stream.

## run-unit

This term is synonymous with user COBOL/DML program. It is a collection of executable user coding associated with one INVOKE statement, one user working area, and one set of system status information location.

# S

## SAM

See system activity monitor.

## SAT

See system access technique.

## scheduling priorities

The control streams for jobs submitted for execution are queued on the system resident device (SYSRES) by a scheduling priority. This priority is specified on either the JOB or RUN statement and is either low, normal, high, or preemptive. A priority applies to an entire job and is considered to be normal unless otherwise specified. A priority specified on a RUN statement overrides a priority specified on a JOB statement.

## schema

The logical description of a data base, including the names and descriptions of all areas, records, and sets. The language used to describe the schema is the schema data description language.

## screen format services (SFS)

An interactive program that allows you to create and modify formats (forms) on a video terminal (workstation). The forms, in turn, can be used to supply input data or display output data from a program.

## SDU

See system definition utility.

## security maintenance utility (SMU)

A utility program that allows the system administrator to control access to the interactive facilities of the system and to account for time used by interactive users of the system.

## seek time

In disk operations, the amount of time required for the mechanical movement of a read/write head to reposition it from one track to another.

#### segment

A portion of a message generally the size of a network buffer.

#### set

A related group of data base records with one owner record and one or more member records. A record can own or be a member of more than one set.

## set constructor

A list of member designators that creates set values during the execution of a Pascal program. A member designator is an expression of an ordinal type or a range of an ordinal type.

## SFS

See screen format services.

## shared definition

A definition that is contained in a reentrant object module.

## SIB

See system information block.

## SID

A unique site identification presented to the processor by a remote site during the initialization of that site. (See *RID*, *SID*, *DID*.)

## single-cycle sort

The entire sort/merge procedure is performed in one cycle; i.e., the operational phases are performed in sequence, without any of the phases being repeated. The volume of data to be sorted is limited to the physical capacity of the disk or tape work area assigned. In a tape sort, each reel of tape assigned to the sort must be able to contain all of the records being sorted.

## single-phase load modules

Single-phase load modules are those that consist of a single program segment that is loaded into main storage each time the program is executed. The storage structure of a single-phase load module can be represented by a single horizontal line whose length is relative to the amount of serial storage locations required to store the load module in main storage. All load modules generated by the linkage editor start out as single-phase load modules and are created only as multiphase or multiregion load modules if so directed through OVERLAY and REGION control statements in the input control stream. Thus, single-phase load modules are modules that consist solely of a root phase; multiphase and multiregion load modules consist of a root phase plus one or more phases.

## single-station device (SSD)

Commonly refers to a display terminal that is not on a multiplexer.

## site identification (SID)

See RID, SID, DID.

# SMUSee security maintenance utility.SOESee start of entry.SOHSee start of header.SOMSee start of message.

## sort common module (SG\$ORT)

An interface module residing in the system object library file (\$Y\$OBJ). To establish a communication interface between the user program and the subroutine sort/merge, the sort common module is linked to the user program in a link edit run by naming MR\$ORT as an *external reference (EXTRN)*. The linkage editor makes the sort common module part of the user program when it builds the load module. When the user program is loaded into main storage, the sort common module remains there for the duration of subroutine sort/merge processing and provides a link between the user program and the subroutine sort/merge.

## sort/merge process

Records are read one at a time into main storage where initial sorting is performed by key field or control field comparison, producing strings of sequenced data. The record strings are written to disk or tape work files (if assigned), where they are continuously merged into longer strings. At the final merge, the data string is brought into main storage and written to the output file.

## sort parameter table

A table constructed by independent sort/merge and subroutine sort/merge from specifications submitted on independent sort/merge control statements, subroutine sort/merge macroinstructions, PARAM job control statements, and/or from default specifications. Entries in the table define the conditions under which the particular sort/merge or merge-only operation is to be performed.

## source/proc module management

The librarian provides facilities for the maintenance of source or proc code modules. It can maintain copy, proc, and macro definition modules as well as source-level code modules for processing. Source-level code modules can be listed, filed, punched, corrected, and renamed, as well as handled with the standard librarian-provided functions. Specific source records can be added and/or deleted from a source element. Updated source-level modules may be mapped as corrections are applied. Source records are printed individually in 80-byte EBCDIC format.

## split cylinder allocation

Disk files in OS/3 may be allocated on a split-cylinder basis; i.e., several member files may be included in the set sharing the same *extent* area.

Split cylinder allocation minimizes access arm movement and is used if two or more related sequential disk files are to be accessed by the same program. A split cylinder set comprises a primary member and one or more subsequent members; each member may be specified as a percentage of the whole set.

## spooling (simultaneous peripheral operation online)

A technique that increases the throughput of a system by buffering data files for lowspeed input and output devices to a high-speed storage device, independently of the program that uses the input data or generates the output data. Data from card readers or from remote sites is stored on disk for subsequent use by the intended program. Data output by the program is stored on disk for subsequent punching or printing.

## spread card feature

The RPG II spread card feature permits associated fields to be contained on spread cards. A spread card consists of a handler portion followed by as many trailer portions as are desired (within the space of a single card). Each trailer portion can contain several fields, but all trailer portions must contain the same fields in the same order. A trailer portion cannot be split between two spread cards. Because more than one detailed record is placed on a single punched card, the number of input cards is reduced.

#### SSP

See system service programs.

#### standard volume labels

Used to identify your disk volume by a unique serial number and to locate the address of the volume table of contents. VOL1 is the normal standard volume label in OS/3.

#### start of entry (SOE)

Defines the beginning of the area to be transmitted to the processor or to the auxiliary interface from a display terminal.

## start of header (SOH)

A character signaling the start of header for a blocked message; 02 in both ASCII and EBCDIC.

#### start of message (SOM)

First character in a blocked message; usually the same as the SOH character.

#### status

An indicator or set of indicators displaying the state of a particular object or function.

#### status switching instructions

The instructions that provide the capability of altering processor operating characteristics. The set program mask (SPM) and supervisor call (SVC) instructions replace part of the current program status word (PSW).

The test and set (TS) instruction is used to control a byte in main storage to act as an indicator.

#### subfile

A subset of defined records or subrecords in a defined file, which provides alternative and more restrictive access.

#### subrecord

A subset of items in a defined record that allows alternative and more restrictive access.

#### subroutines

Subroutines are procedures coded as subprograms. Subroutines are either user-coded or supplied as standard library subroutines. Subroutines are referenced via the CALL statement; may return multiple values or no value; and return control to the first executable statement after the CALL statement or to a selected statement in the referencing program unit.

#### subschema

A portion of the description of a data base (schema) that is of interest to one or more specific application program. The language used to describe a subschema is the subschema data description language.

## subtask

A task that is created by a user ATTACH macroinstruction and executes concurrently with the parent task.

#### succession

The mechanism that provides the dynamic linkage of IMS action programs in a transaction. Immediate internal succession provides the linkage between two action programs in an action with no modification in resource allocation. Delayed internal succession provides the linkage between two action programs in an action with modification in resource allocation. External succession provides the linkage between actions in a transaction.

#### summary sort

A sorting method used by the SORT/3 program to summarize or accumulate the contents of designated data fields in the records sorted.

## SVC

A privileged instruction that produces an interrupt, thus giving control to OS/3, which, in turn, processes the request for service.

## SVT

See Unisys video terminal.

#### switching

As in message switching, switching is the routing or directing of messages through a central system to their final destinations.

## switching priority

Determines the order in which central processor control is passed from task to task. The number of user switching priorities ranges from 1 to 62. The number of priorities is established at system generation time. The minimum supervisor configuration requires only one priority, regardless of whether it operates in a multijobbing or multitasking environment.

#### symbiont

A system utility routine that operates concurrently with other system programs and with user programs, and is executed in the same manner as a job step.

## sync (synchronization character)

Receipt of this character synchronizes a modem for the data following. The code is  $16_{16}$  for ASCII and  $32_{16}$  for EBCDIC.

## synchronous

A method of transmission or a type of equipment, in which sending and receiving units are matched or synchronized by a timing signal called a sync character, prior to the actual movement of data. This method precludes insertion of timing information in each character, as is required in asynchronous transmissions.

#### SYSGEN

The operation of defining computer's operating system.

## system access technique (SAT)

An input/output control system that provides a standard interface for tape and disk subsystems between OS/3 data management and the physical IOCS.

## system activity monitor (SAM)

A system symbiont that allows you to monitor and record your system's activity. It allows the system administrator or installation manager to detect production bottlenecks, optimize production job mixes, and identify system variables that can be changed to improve system performance.

## system definition file (\$Y\$SDF)

A file provided with a release that contains a list of the default microcode names (levels) associated with devices/modes and device addresses. When new microcode for a device is installed, or when a device is updated and new microcode is required, the \$Y\$SDF file must be updated to reflect the new microcode level.

#### system definition utility (SDU)

An interactive utility program used to change (update) the \$Y\$SDF file when changes are necessary after installation. The utility program can be run from a workstation (using the SDU version) or from a system console (using version XSDU).

#### system dump

A dump of the operating system used to determine the cause of a system crash.

## system information block (SIB)

An area in main storage containing system control information.

#### system job control stream library file (\$Y\$JCS)

Provides permanent storage for control streams. It is used as the output file for the file symbiont and is the input to the run symbiont, whether by specification or default. The file identifier of the system JCS library file is \$Y\$JCS.

#### system library file

A permanent system file containing system programs and supporting the operating system.

#### system load library file (\$Y\$LOD)

Provides permanent storage for the executable programs (load modules) supplied as part of the operating system. Can also be used to provide permanent storage for user load modules. This file is used as the input library by the system loader. The file identifier for the system load library file is \$Y\$LOD.

#### system macro library file (\$Y\$MAC)

Provides permanent storage for the standard system macro definitions. This file is used as an input library by the assembler macro facility. The file identifier for the system macro library file is \$Y\$MAC.

## system object library file (\$Y\$OBJ)

Provides permanent storage of the object modules supplied as part of the operating system. Can also provide permanent storage for object modules of user programs. This file is used as an input library by the linkage editor. The file identifier for the system object library file is \$Y\$OBJ.

#### system patch

A system maintenance change (SMC) made to the operating system's load modules, object modules, or transients.

## system program

A software program provided by Unisys.

## system program library

See system library file.

## system service programs

Standardized programs that perform certain functions common to data processing installations. These include data utilities, linkage editor, librarian, sort/merge, system utilities, and dumps.

## system source library file (\$Y\$SRC)

Provides permanent storage for source modules consisting of source coding as processed by language processors. The file identifier for the system source library file is \$Y\$SRC.

#### system utilities

A group of system service programs that perform the following types of function: data and file conversions; tape and disk initializations; and system log and system catalog manipulations.

# Т

## tag-along sort

A sort method used by SORT/3 program that allows the data fields to "tag along" with the control fields in the sorted records. The output from a tag-along sort can consist of control and data fields, control fields only, or data fields only.

## tag sort

A method of sorting in which direct access addresses and key fields, or direct access addresses alone, are stripped from each record and formed into a new record. A tag sort can be performed only when input is from nonindexed disk files.


#### tape cassette subsystem (TCS)

An auxiliary magnetic tape system for a UNISCOPE or DCT 524 terminal.

#### tape control appendage (TCA)

A control block that contains the characteristics of a magnetic tape file used by the SAT routines.

#### tape mark

A special bit-pattern or control block recorded on magnetic tape, essentially indicating the boundary between files and file labels, and also certain label groups. In OS/3 EBCDIC standard labeled, nonstandard labeled, and unlabeled tape volumes, the second of two tape marks following the data blocks of the last file on the volume signifies that no valid information follows.

#### tape prep

The initialization of a tape volume. This includes assigning a volume serial number, assigning a unique file name, and optionally specifying block numbering.

#### tape sort

Sort/merge procedure in which auxiliary storage is on tape. Three to six tape units may be assigned. The names SM01,...,SM06 must be designated on LFD job control statements.

#### task

A unit of work capable of competing with other tasks for control of the central processor. A task is a logical point of control rather than a physical set of instructions. Each job step has at least one task (the primary task) and may have additional tasks (subtasks), all of which compete independently for processor time. There may be a maximum of 256 tasks per job.

#### task control block (TCB)

A control table generated for each task and stored in the job region prologue. A TCB is constructed for each job step submitted by job control for execution. Additional TCBs are constructed for each subtask created by the ATTACH supervisor macroinstruction.

#### TCA

See tape control appendage.

#### TCB

See task control block.

#### TCI

See transaction control interface.

#### TCS

See tape cassette subsystem.

#### terminal

One of many names given to data input or output equipment, or facilities at one end of a communications channel.

#### terminal printer

A designation for the auxiliary printer device to the display terminal.

#### terminal table

A compilation of entries, resulting from the execution of TERM macroinstructions, used for controlling message traffic to and from terminals by way of queues. It may be considered an extension of the line table.

#### thread

A unit of control for the sequence of events needed to complete the processing of an action.

### total gang mode

If the function to be performed does not concern itself with a specific module or code set, the type and name positional parameters must not be specified. In this case, an entire library (or remainder of one pre-positioned) may be manipulated via the facility desired. The gang operations always process the library file from its current position as defined by the respective file table contained within the program.

#### total time

Total time is the point during the RPG II processing cycle when all data for a particular group of records has been accumulated, and the calculation and output operations required at this time are performed.

#### trace

A diagnostic technique in the monitor routine that prints program information (PSW and register contents, etc.) at specified points in a program executing in the monitor mode so that errors can be located and corrected.

#### transaction

A sequence of related input and output messages processed by one or more action programs in IMS.

#### transaction code

A message or function key entered at a terminal to identify and initiate a transaction.

## transaction control interface (TCI)

ICAM interactive interface for information management system communications.

#### transaction terminal table

An activity request table for the transaction control interface.

#### transient

An OS/3 data management routine that is effectively nonresident, but may be retrieved automatically from auxiliary storage and assigned to an area of main storage for execution.

#### transient work area specification

The capability to specify the size of the transient work area at supervisor generation (SUPGEN) using a keyword parameter. When specified, transients are loaded directly from the work area instead of from the SYSRES volume.

#### turnaround time

The time required to reverse the direction of transmission on a half-duplex carrier facility. During a turnaround operation, which is controlled by the data set, the facility is not available for transmission in either direction.

#### type

A specific indication of the classification of the program module or record being referenced within a given library file.

### U

#### UDLC

Universal data link control (UDLC) is a bit-oriented communications line protocol that handles other protocols as subsets.

#### unattended answering

The ability of a communications receiver to accept incoming traffic without human intervention; the counterpart of automatic dialing.

#### UNIQUE

An acronym for *uniform inquiry update element*. UNIQUE is software package provided by Unisys that allows an easy way to access and process records in a file.

#### unsolicited output

All messages that are not responses to previous input (e.g., requests from one terminal to be transmitted to another terminal).

#### Unisys video terminal (UVT)

Supersedes the abbreviation SVT; identifies the UVT 1120/1122 family of video terminal devices.

#### UNXSAM

The system access module of OS/3 that allows you to execute UNIX applications and shell commands from OS/3 using an asynchronous line.

#### update records

As defined by the assign alternate track routine, records correcting errors that are encountered when reading from a defective to an alternate track.

#### user library file

A private user file containing user programs existing in any or all of the specified formats. This is a permanent file existing in support of the user. A user library may be composed of multiple user library files.

#### user program

A software program provided by the user.

#### user program library

All user program modules for a given system. This library is private and comprises all user programs.

#### user program switch indicator (UPSI)

Last byte of the 12-byte communication region in the job preamble. The two most significant bits of the UPSI byte are used to communicate error conditions to the user.

#### user volume label (UVL)

Permitted in ASCII magnetic tape files but bypassed by OS/3 data management if present in input files. Not created on output.

#### UTS COBOL

The Unisys Universal Terminal System COBOL. UTS COBOL is used with the UTS 400 and UTS 4000 systems and conforms to the requirements of American National Standard COBOL X3.23-1974, the specifications of the American National Standards Institute.

#### UVT

See Unisys video terminal.

# V

#### value attribute

The value assigned a symbol when it appears in the label field of any source code statement other than a comment. A symbol appearing in the label field of an EQU or ORG directive is assigned the value of the expression in the operand field. In all other cases, the value assigned is the current value of the location counter after the adjustment to a half-word, full-word, or double-word boundary, if necessary. The value is assigned to the current label before the location counter is incremented for the next instruction, constant, or storage definition. Thus, if a symbol appears in the label field of a statement defining an instruction, constant, or storage area, the symbol is assigned a value equal to the storage area address of that instruction, constant, or storage area.

The value of a symbol must lie in the range  $-2^{23}$  through  $2^{23}-1$ .

#### variable inline expansion code

An assembler macro capability (BLANK macro) that allows you to create cleared areas in the inline code containing blanks (X'00). The two parameters in the macro allow you to specify the starting address of the area to be cleared and the number of bytes to be cleared.

#### variables

A variable is represented by a symbolic name that identifies a single value and is associated with a data type. Both a standard and an optional length specification determines the number of bytes assigned in main storage. The data type associated with a variable is determined by either the explicit type declaration statements, by the IMPLICIT statement, or by the variable name used. Names beginning with the letters I, J, K, L, M, or N are assumed to represent integer values; names beginning with all other letters or \$ are assumed to represent real values.

#### variant

A data item in the variant part of a Pascal record that represents one way a record structure may vary. Variants occupy the same area of storage, so that only one may be used at a time.

#### **V-CON**

A special reference to an external symbol that may exist in an exclusive phase when the program has been link-edited, and that may require automatic loading of an exclusive path. Such a constant may not be used to reference data; it is used only for branching.

#### verb skeleton screens

A COBOL editor capability that allows you to display all formats of a COBOL verb (statement) from a procedure division coding form screen, a standard COBOL coding form screen, or another verb skeleton screen.

### vertical format buffer (VFB)

A buffer in the certain printers used to control forms indexing and containing a location for each line on the form.

#### volume sequence number

The position of the current tape or disk volume with respect to the first volume of a sequential, multivolume file. Contrast with *volume serial number*.

### volume serial number

One to six alphanumeric characters used to identify a physical tape, disk or diskette volume. Each installation may have its own system for numbering volumes.

## volume table of contents (VTOC)

Contains the address of all information stored on a direct access volume. The VTOC is made up of seven different format labels, format 0 label through format 6 label.

# W

#### winner record

The record that meets the sequencing criterion as a result of comparing one record from each input file. In a subroutine *merge-only* process, the winner record is returned to the user program; another record is then released to the merge from the input file associated with the winner record for the next comparison.

# X

#### XSDU

The interactive utility, run from a system console of some System 80 models, that is used to change (update) the \$Y\$SDF file when changes are necessary after installation. See system definition utility.

# Appendix Statement Conventions

The conventions that follow explain the presentation of statement formats in the OS/3 library.

Positional Parameters

Positional parameters must be written in the order specified in the operand field and must be separated by commas. When a positional parameter is omitted, and subsequent positional parameters are being specified, the comma associated with the omitted parameter must be retained; otherwise, the specified parameters will not be processed as required. If no subsequent parameters are being specified, their associated commas should be omitted.

For example, the ALTER job control statement has four optional positional parameters. This is presented as follows:



Then, the statement may be written:

- // ALTER phase-name,address,change,RESET
  // ALTER phase-name,address,change
  // ALTER phase-name,address
  // ALTER phase-name
  // ALTER phase-name,,change
  // ALTER ,,,RESET
  // ALTER phase-name,,,ORG
- Keyword Parameters

A keyword parameter consists of a word or code usually followed by an equal sign, which is, in turn, followed by a specification. Keyword parameters can be written in any order in the operand field. A comma is required to separate each parameter. These rules apply for almost all the keywords in the OS/3 library. When a deviation occurs, it is explained in the parameter description.

To explain the use of keyword parameters, we'll use the VFB job control statement and its first four parameters:



Then, the statement can be written in any of the following forms:

// VFB LENGTH=lines,DENSITY=6,FORMNAME=symbol,USE=stand

// VFB USE=stand,FORMNAME=symbol,DENSITY=6,LENGTH=lines

// VFB DENSITY=6,LENGTH=lines

// VFB LENGTH=lines

// VFB FORMNAME=symbol,USE=stand

Subparameters

A positional or keyword parameter may contain a sublist of parameters called subparameters, which are separated by commas and enclosed in parentheses. The parentheses must be coded as part of the list. The subparameters within the parentheses may be positional, in which case the associated commas must be retained if a parameter is omitted, except in the case of trailing parameters, or they may be nonpositional. The description of the subparameters will indicate whether they are positional or nonpositional. For example:

[,OVF1=(line-1,...,line-n)][,OVF2=(line-1,...,line-n)]

Capital Letters, Commas, Equal Signs, Apostrophes, and Parentheses

Capital letters, commas, equal signs, apostrophes, and parentheses must be coded exactly as shown. For example:

- CMcc X'aa' NUMBCHAR=n (NOV)
- Lowercase Letters and Words

Lowercase letters and words are generic terms representing information that must be supplied by the user. Such lowercase terms may contain hyphens and acronyms for readability. For example:

- lfn vol-ser-no max-time destination filename
- Braces

Information contained within braces represents mandatory entries of which one must be chosen, such as:

BB,nn BM,nn FB,nn FM,nn WM,nn RL RU • Brackets

Information contained within brackets represents optional entries that, depending on program requirements, are included or omitted. Braces within brackets signify that one of the specified entries must be chosen if that parameter is to be included. For example:

[sched-priority]

• Default Specifications

An optional parameter having a list of optional entries may have a default specification that is supplied by the operating system when the parameter is not specified by the user. Although the default may be specified with no adverse effect, it is considered inefficient to do so. For easy reference, when a default specification occurs in the format delineation, it is printed on a shaded background. If, by parameter omission, the operating system performs some complex processing other than parameter insertion, it is explained in the parameter description. For example:



• Ellipsis

An ellipsis (a series of three periods) indicates the presence of a variable number of entries. For example:

(line-1,...,line-n)

• Delta

A delta in a format indicates that a space must appear in that position. The delta should not be coded. For example:

//**APARAM** 

should be coded as:

// PARAM

Reverse Lettering

Information appearing in reverse lettering (white characters on black background) on sample screens represents entries keyed in by the user. For example:

DISK SCREEN 1 DUS11 PLEASE ENTER YOUR DISK VOLUME SERIAL NUMBER AND FILE NAME. 1. VSN (D01892) 2. FN (DUTESTMIRAMKEYED ) 3. HELP (ENTER ITEM NUMBER OR 3 FOR ALL) (\_)

Underlines

When a portion of a parameter is underlined, only that portion need be keyed in or coded. For example:

FORMNAME=symbol

can be coded as:

F0=symbol

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