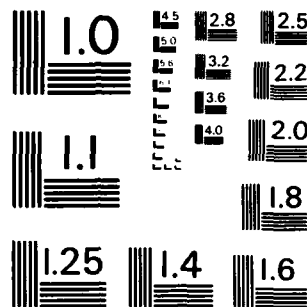


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AISIM INSTALLATION AND ACCEPTANCE TEST
PLANS AND PROCEDURES

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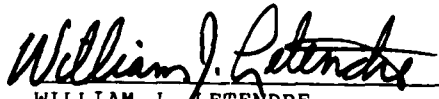
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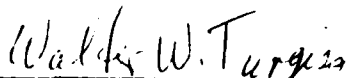


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1. INTRODUCTION

This document describes the procedures for installing and conducting the installation and acceptance testing of AISIM Version 2.0. Comprehensive testing of a system can be divided into three categories: component testing, integration testing, and demonstration testing.

Component testing is intended to verify that each system component works properly. Such testing is the sole responsibility of the developers and, therefore, is beyond the scope of this document.

Integration testing is intended to show that all the components operate together properly. This testing is planned and performed by the developers.

Demonstration testing is intended to show that the system meets its functional requirements. This testing is broken into two phases: 1) installation testing and 2) acceptance testing. Hughes has developed the procedures for performing these tests and they are contained herein. Testing should be performed by personnel representing the contractor and the customer.

This document also contains a description of the contents of the system tape - its files and organization. The procedures for loading this tape on the host computer and then building the AISIM system are described in detail.

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2. SYSTEM GENERATION PROCEDURES

The data necessary to install AISIM on a suitable computer system are described in this section.

2.1 Host System Requirements

Before AISIM can be installed on a computer (or "host") system, the following constraints must be satisfied:

1. The prospective host must have an interactive operating system that is compatible with IBM 370 file structures;
2. A FORTRAN IV compiler must be available;
3. A SIMSCRIPT II.5 compiler must be available;
4. A copy of the PLOT10 package must be available;
5. The host must have the memory capacity to handle the largest load module (i.e., the DESIGN program: 868,648 bytes), or the ability to segment load modules into manageable chunks.

If any of these conditions are not met, AISIM cannot be successfully installed on that system.

2.2 Rehosting AISIM

There are two different scenarios to which this section is directed. The first is the user who has an IBM 370/MVS EXTENDED TSO machine and wants to get AISIM up as quickly as possible. After dumping the files from the tape, this user should only have to alter the CLISTS and will then be able to execute the system. Section 2.3 describes how to dump the files from the tape and section 2.4.2 describes how to set up the CLISTS to execute AISIM on the new host system.

The second scenario is the user who determines that the operating system of the target host machine is not exactly compatible with IBM 370/MVS EXTENDED TSO. In this case the user will have to do more work, the amount being relative to the number of system incompatibilities. The user will probably have to recompile the source files, create new data bases, and bring AISIM up from scratch. This user should consult section 2.3.1 on dumping the files from the tape and section 2.4.3 on bringing AISIM up from scratch.

2.3 Reading the AISIM Tapes

Following is a list of the types of files which are on the AISIM tapes.

1. Fortran source files: xxxx.fort - The Fortran routines make up the source for the Design, Replot, and Hardcopy Functions, the translator, and the user interface for the Analyze and Library Functions.
2. The AIS.GFM.DATA, AIS.CHECKIN.DATA, and AIS.MERGEIN.DATA files - These are the simscript II.5 source code for the AISIM simulator and Library Function. These programs are split up into functional parts and stored in partitioned data sets (PDS).
3. Load Modules: AIS.SYSTEM.LOAD and AIS.LIBUTIL.LOAD - These are the load modules for executing the AISIM system.
4. CLISTS: xxxx.clist - These are the command procedures that are executed to build and run the system.
5. Data Bases: xxxx.dbf - These are the initialized AISIM start data bases, the System Library data base, and the data bases to be used in conjunction with the test procedures for verifying the operation of AISIM.
6. JCL files: CRKEX1.CNTL and CRKSRL.CNTL - These are Job Control Language (JCL) files which will dump the files from the tapes to a disk.
7. Miscellaneous files: everything else - These include the data base schemas and data used to initialize AISIM data bases.

Note: There are no object files contained on these tapes. The IBM utilities used to create the tapes were IEBCOPY for the PDS's and IEBGENER for the sequential data sets. In order to make unloading the tapes as easy as possible, a file has been placed on each of the tapes to read the tape files to disk. These files also use IEBCOPY and IEBGENER to handle the PDS's and sequential data sets, respectively. These files must be modified before they can be executed:

1. The data set names in the JCL, indicating the names under which the files are to be placed on the disk, must be fully qualified (without quotes). The JCL file must be modified to reference the account where the AISIM files are to be placed: all occurrences of 't*****' must be changed to the appropriate identification of the account where the AISIM files are to reside.
2. The output disk where the files are to be placed must be specified. All instances of 'TSO###' must be changed to reference a valid disk unit. All references to UNIT should be changed to the appropriate reference.

3. Finally, the serial number of the tape must be specified. This name or number is assigned to the tape before it is mounted. The JCL assumes the tapes will be named AISSR1 and AISEX1, but this should be changed to be compatible with the actual labelling.

Following are the JCL files for retrieving the JCL files from the tapes. These programs will retrieve the JCL files which will read the files off of the tapes. These JCL programs must be written and modified as outlined in the above three steps. They can then be submitted to read from the tape the files which will load all of the AISIM files. The retrieved JCL files will be placed on the disk under the names CRKSRL.CNTL and CRKEX1.CNTL.

```
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT1 DD UNIT=TAPE,VOL=SER=AISSR1,SPACE=(1,(1,1)),
//          LABEL=(39,NL),DISP=(OLD,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSUT2 DD DSN=T*****.CRKSRL.CNTL,
//          UNIT=DISK,DISP=(NEW,CATLG,CATLG),VOL=SER=TSO###,
//          SPACE=(TRK,(1,1),RLSE),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
/*

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT1 DD UNIT=TAPE,VOL=SER=AISEX1,SPACE=(1,(1,1)),
//          LABEL=(20,NL),DISP=(OLD,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSUT2 DD DSN=T*****.CRKEX1.CNTL,
//          UNIT=DISK,DISP=(NEW,CATLG,CATLG),VOL=SER=TSO###,
//          SPACE=(TRK,(1,1),RLSE),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
/*
```

After the above changes have been made to the JCL files (CRKEX1.CNTL and CRKSRL.CNTL) from the tape, these files should execute without further difficulty. An attempt has been made to supply all of the necessary parameters to the JCL files, but if necessary, the files can be altered to suit specific needs. However, the input DCB parameters should not be changed because the current parameters will ensure that the files are read correctly from the tape. Likewise the space allocations should be altered with care. If the space on the disk upon which the files are to reside is highly fragmented, it may be necessary to increase the allocations, but the allocations presently in the JCL file are the smallest possible with a margin of safety to ensure that there is enough space for normal allocation of the files.

Note: When the AISIM files are dumped from the tapes to disk,

there must not already exist on the disk any files with the same names as those assigned to the files on the tape. If files by those names already exist, the tape files with the duplicate names will not be dumped from the tape. If there are problems executing the JCL file, consult the IBM/MVS JCL manual.

2.3.1 Contents of the Tape The following is a list of all the data sets in the order in which they appear on the tapes, along with a brief description of each data set and its organization: PDS for partitioned data set and SEQ for sequential data set.

Tape AISSR1:

AIS.DDL.DATA	- This is the schema for the design data base. (SEQ)
AIS.MODEL.DDL.DATA	- This is the schema for the library model data base. (SEQ)
AIS.PLOT.DDL.DATA	- This is the schema for the plot data base. (SEQ)
AIS.KERNEL.ADEGRAPH.DATA	- This is the data for initializing the ADE graphics in the design data base. (SEQ)
AIS.KERNEL.FORMSPEC.DATA	- This is the data for initializing forms in the design and library model data bases. (SEQ)
AIS.KERNEL.GRAPHICS.DATA	- This is the data for initializing Process Primitive graphics in the design and library model data bases. (SEQ)
AIS.KERNEL.SYMBOL.DATA	- This is the data for initializing the ADE symbol forms in the design data base. (SEQ)
AIS.SYSGEN.CLIST	- These CLISTS are used to compile and link the AISIM system. (PDS)
AIS.SYSGEN.LINK.CNTL	- These files are data used by the AIS.SYSGEN.CLISTS in performing links. (PDS)
ADBMS.SLIB.ASM	- These are the ADBMS assembly language routines. (PDS)
AIS.IOLIB.ASM	- These are the assembly language Input/output routines. (PDS)
ADBMS.DBLIB.FORT	- These are the ADBMS user and internal routines. (PDS)

ADBMS.FLIB.FORT	- These are the ADBMS utility routines. (PDS)
AIS.ADEDBL.FORT	- These are the ADE data base access routines. (PDS)
AIS.ADELIB.FORT	- These are the ADE top level routines. (PDS)
AIS.ANLDBLIB.FORT	- These are the Analyze and Replot data base access routines. (PDS)
AIS.AUILIB.FORT	- These are the Analysis User Interface routines. (PDS)
AIS.CLILIB.FORT	- These are the Command Language Interface routines. (PDS)
AIS.COXLAT.FORT	- These are the Fortran Checkout Function routines. (PDS)
AIS.DBDLIB.FORT	- This contains the utility routines for initializing data bases and the DBMS common block. (PDS)
AIS.DBLIB.FORT	- These are the Design data base access routines. (PDS)
AIS.DUILIB.FORT	- These are the top level Design User Interface routines. (PDS)
AIS.FAST.FORT	- These routines buffer data to and from the terminal to speed graphics. (PDS)
AIS.HCLIB.FORT	- These are the routines for the Hardcopy Graphics Function. (PDS)
AIS.HPLIB.FORT	- These routines control the HP terminal. (PDS)
AIS.INITDB.FORT	- These routines are used to generate new initialized data bases. (PDS)
AIS.IOLIB.FORT	- These routines perform data I/O between AISIM and the host system communications. (PDS)
AIS.LIBUSIF.FORT	- These are the routines for the Library User Interface. (PDS)
AIS.LPTLIB.FORT	- These routines are used in the generation of a legal path table. (PDS)
AIS.MOXLAT.FORT	- These are the Fortran Mergeout Function routines. (PDS)

AIS.OFDLIB.FORT	- These are the routines for the Process Editor Interface. (PDS)
AIS.PLOTFLIB.FORT	- These are the routines for the Replot Function. (PDS)
AIS.PLOTL.FORT	- These routines are used to draw linear graphics. (PDS)
AIS.TTYAUI.FORT	- These are Analysis support routines. (PDS)
AIS.XLATLIB.FORT	- These are the Translator routines. (PDS)
AIS.CHECKIN.DATA	- These are the Simscript routines for the Checkin Function. (PDS)
AIS.MERGEIN.DATA	- These are the Simscript routines for the Mergein Function. (PDS)
AIS.SIMLATOR.DATA	- These are the Simscript routines for the Analyze Function. (PDS)
CRKSRL.CNTL	- This is the JCL file for dumping all of the above files to disk.

Tape AISEX1:

AIS.LIBUTIL.LOAD	- This the load module for the Library Function. (PDS)
AIS.SYSTEM.LOAD	- This is the load module for the rest of the AISIM system. (PDS)
AIS.CONTRL.CLIST	- These are the CLISTS which control the execution of AISIM. (PDS)
AIS.USER.CLIST	- This is the CLIST which is placed on the user's ID to enable access to the AISIM system. (PDS)
AIS.MESSAGES.TEXT	- This contains text messages which can be displayed at the start of an AISIM session. (PDS)
AIS.VERSION.TEXT	- This contains text messages which can be displayed for a specific version of AISIM. (PDS)
AIS.STARTDB.DBT	- This is the initialized data base table for the Design Function. (SEQ)

/

AIS.MODEL.STARTDB.DBT - This is the initialized data base table for the Library Function. (SEQ)

AIS.PLOT.START.DBT - This is the initialized data base table for the Replot Function. (PDS)

AIS.STARTDB.DBF - This is the initialized start data base for the Design Function. (SEQ)

AIS.MODEL.STARTDB.DBF - This is the initialized start data base for the Library Function

AIS.PLOT.STARTDB.DBF - This is the initialized start data base for the Analyze Function. (SEQ)

AIS.SYSTEM.LIBRARY.DBF - This is the initialized start data base for the System library for the Library Function. (SEQ)

TESTDB1.DBF - This is a data base to be used in the Installation Test Plans and Procedures. (SEQ)

TESTDBA.DBF - This is a data base to be used in the Installation Test Plans and Procedures. (SEQ)

TESTDBB.DBF - This is a data base to be used in the Installation Test Plans and Procedures. (SEQ)

TESTDBC.DBF - This is a data base to be used in the Installation Test Plans and Procedures. (SEQ)

TESTDBD.DBF - This is a data base to be used in the Installation Test Plans and Procedures. (SEQ)

TESTDBE.DBF - This is a data base to be used in the Installation Test Plans and Procedures. (SEQ)

CRKEX1.CNTL - This is a JCL file to dump all of the above file to disk. (SEQ)

Appendix A shows the JCL which was used to place the files on the tape and read the files from the tape.

2.4 Building AISIM

2.4.1 General Information About Host System Requirements

Following is a list of conditions which must exist on the host system in order for AISIM to be executable.

- The host system must allow a terminal transmission length of at least 620 bytes in order to accommodate the largest form displayed by AISIM.

- The ASCII to EBCDIC translation table in AIS.IOLIB.ASM(anyout) must generate EBCDIC code which is compatible with what the host system expects.
- The terminal line size must be at least 80 characters per line to accommodate Fortran read statements in the AIS.CLILIB.FORT routines.

2.4.2 Executing Existing Load Modules A user who has an IBM 370/VMS EXTENDED TSO machine available and who wants to get AISIM up as quickly as possible can do so by simply executing the load modules loaded from the tape. It will not be necessary to bring up the system from scratch.

In order to execute AISIM, the user will need the load modules for the system and the controlling CLISTS (i.e. everything read from tape AISEX1). The necessary load modules are all in the PDS's ais.system.load and ais.libutil.load. The data bases are ais.startdb.dbf, ais.model.startdb.dbf, ais.plot.startdb.dbf, and ais.system.library.dbf. These data bases are already initialized and ready to be used to create a user's data bases. When a user invokes AISIM and does not have an existing data base, a copy is made of the AISIM start data base. These start data bases should never be used as a user's data base.

Before the system can be executed, the execution CLISTS will have to be modified slightly. The file ais.user.clist(ais) is the top level CLIST used to execute AISIM. This file calls the ais.contrl CLISTS which actually control the execution of AISIM. The ais.user.clist(ais) and the files in ais.contrl.clist will have to be altered to access the catalog where the AISIM files are stored. Most of these files are currently set to execute off the account 'TF01508'; they should be changed to reference the account where the AISEX1 tape has been dumped.

2.4.3 Building AISIM From Scratch If the user determines that the operating system of the target host machine is not exactly compatible with IBM/MVS EXTENDED TSO, then bringing up AISIM will involve a bit more work. The amount of work necessary will depend on the extent of the incompatibilities. The following steps will outline what is necessary to bring up AISIM completely from scratch and the user will have to decide if some of these steps are unnecessary or if the entire system must be rebuilt.

2.4.3.1 Modifying Assembly Language Routines AISIM contains two data sets of assembly language routines: ais.iolib.asm and adbms.siib.asm. These routines are highly system dependent and thus will probably have to be rewritten. These can be used as a guide to what the routines must do, but host compatible routines must be created.

2.4.3.2 Altering The CLISTS First of all, the CLISTS must be altered. These CLISTS include the ais.user.clist, ais.contrl.clist, and ais.sysgen.clist data sets. If these CLISTS are completely unusable in their present form, the user can use them as a guide in writing his own CLISTS. If they can be executed as is, then only some minor modifications will be necessary. The ais.user.clist and ais.contrl.clist data sets which are used to execute the system must be modified as outlined in section 2.4.2. The files in the ais.sysgen.clist data set are used to compile the source files and link load the modules. All of the files in this data set will also have to be modified as in section 2.4.2 to reference the correct account. These files also usually access the account 'TF01508'. In the CLISTS, any data set which is referenced without single quotes around its name is assumed to reside in the user's own area. All data sets whose names are enclosed in single quotes reference data sets residing in the catalog whose name is the portion of the name up to the first period. For example the data set 'sysl.fortlib2' references the data set fortlib2 in the catalog 'sysl'. All data sets referenced in the CLISTS whose names are enclosed in quotes but which are not referenced as '&user' or 'TF01508' are system utilities on the user's system. The following is a list of the non-user data sets referenced in the CLISTS and a brief description of each.

sysl.fortlib2	- These are the system FORTRAN utility routines.
scin.tcs2lib	- These are the PLOT10 utility routines.
scin.simlib8	- These are the Simscript system utility routines.

2.4.3.3 Compiling AISIM The second step is to compile the source files. Each of the source data sets has a corresponding CLIST to compile the routines in the data set. All routines in each data set should be compiled. The following is a list of which CLIST is used to compile which data set. All of the CLISTS are in the partitioned data set ais.sysgen.clist so only the member name will be listed.

2.4.3.3.1 FORTTRAN Subroutines The following are the FORTRAN subroutines and the CLISTS used to compile them and put the object code into load libraries.

ais.adbdb1.fort	- adbdb1
adbms.db1ib.fort	- adbmsdb
ais.adbmslib.fort	- adbmslib
ais.adedb1.fort	- adedb1

ais.adelib.fort - adelib
 ais.anldblib.fort - anldblib
 ais.aulib.fort - aulib
 ais.clilib.fort - clilib
 ais.coxlat.fort - coxlat
 ais.dblib.fort - dblib
 ais.duilib.fort - duilib
 ais.fast.fort - fast
 adbms.flib.fort - flib
 ais.hclib.fort - hclib
 ais.hplib.fort - hplib
 ais.iolib.fort - iolib
 ais.iolib.asm - iolibasm
 ais.libusif.fort - libusif
 ais.lptlib.fort - lptlib
 ais.moxlat.fort - moxlat
 ais.ofdlib.fort - ofdlib
 ais.plotflib.fort - plotflib
 ais.plotl.fort - plotl
 adbms.slub.asm - slub
 ais.ttyaui.fort - ttyaui
 ais.xlatlib.fort - xlatlib

All of the above compile CLISTS are executed by using the following command:

ex ais.sysgen.clis(above CLIST) 'routine name'

2.4.3.3.2 Common Block The ADBMS common block must also be compiled. It is compiled using the following command:

ex ais.sysgen.clist(dbbik)

2.4.3.3.3 Utilities The routines which are used to create an ADBMS data base and initialize that data base with AISIM forms and graphics data must also be compiled. These CLISTS which compile the necessary routines are listed and described below:

- mddia - compile the program which creates a blank ADBMS data base.
- mdbin - compile the program which initializes an ADBMS data base with necessary ADBMS data.
- mdbdmain - compile the program which initializes an ADBMS data base with AISIM forms and graphics data for a design data base.
- mdbimain - compile the program which initializes an ADBMS data base with AISIM forms and graphics data for a library model data base.
- dbdlib - compile the subroutines which are used by the dbdmain and the dbimain programs.

The first four CLISTS are executed using the following command:

ex ais.sysgen.clist(above CLIST)

The last CLIST is executed with the following command:

ex ais.sysgen.clist(dbdlib) 'routine'

where routine is the name of the routine in ais.dbdlib.fort which is to be compiled. All routines in this data set should be compiled.

2.4.3.3.4 Mains All of the AISIM main programs must also be compiled. The files to execute are the following:

- auimain - compile the Analyze Function main
- checkin - compile the Checkin Function main
- duimain - compile the Design Function main
- hcmmain - compile the Hardcopy Function main
- mergein - compile the Mergein Function main
- plotmain - compile the Replot Function main
- xlatmain - compile the Translator main

These CLISTS are executed using the following command:

```
ex ais.sysgen.clist(above CLIST)
```

2.4.3.4 Linking The Load Modules After all of the files have been compiled, the next step is to link all of the load modules. The following CLISTS are used to link the various modules:

slinkddla - link the program which creates an empty ADBMS data base.

slinkdbin - link the program which initializes an ADBMS data base.

slinkdbd - link the program which initializes an AISIM data base with the forms and graphics data for a design data base.

slinkdbl - link the program which initializes an AISIM data base with the forms and graphics data for a library model data base.

slinkauil - link the Analyze Function.

slinkci - link the Checkin Function.

slinkcos - link the Checkout Function selection interface.

slinkcox - link the Checkout Function translator.

slinkdui - link the Design Function.

slinkhc - link the Hardcopy Graphics Function.

slinkmi - link the Mergein Function.

slinkmos - link the Mergeout Function selection interface.

slinkmox - link the Mergeout Function translator.

slinkpci - link the precheckin interface.

slinkpit - link the Replot Function.

slinkx - link the Translator.

The CLISTS slinkauil, slinkdui, slinkhc, slinkpit, and slinkx are executed using the following command:

```
ex ais.sysgen.clist(above CLIST) 'version'
```

where version is the number of the version to be linked. All of

the other CLISTS are executed as above, but without the version.

2.4.3.5 Build The Start Data Bases After all of the load modules have been built, the next step is to build the AISIM start data bases. The CLIST members which build the necessary data bases are the following:

allocdbd - build the Design start data base:
ais.startdb.dbf and ais.startdb.dbt.

allocdbi - build the Library model start data base:
ais.model.startdb.dbf and ais.model.startdb.dbt.

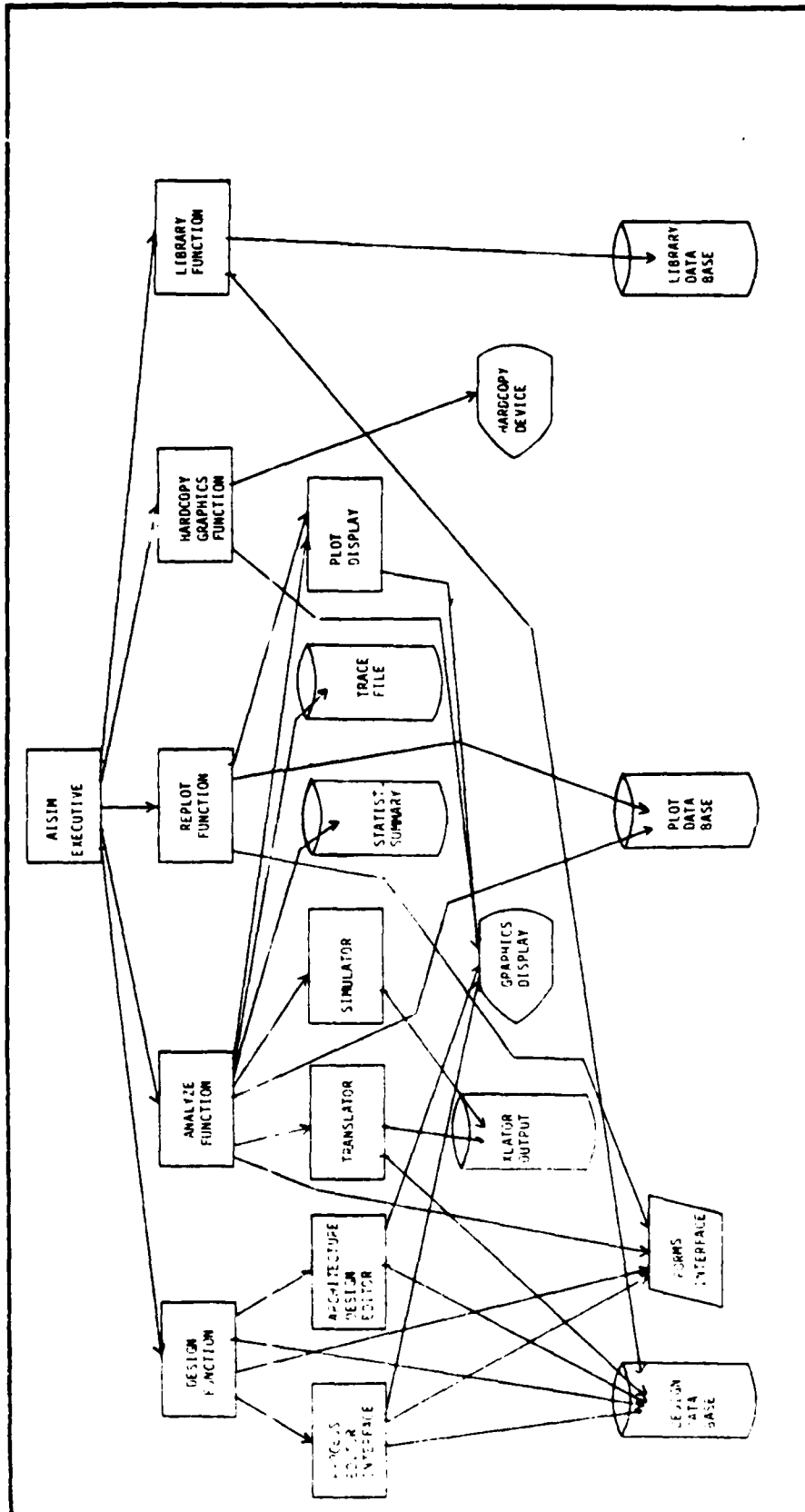
allocplt - build the Replot start data base:
ais.plot.startdb.dbf and ais.plot.startdb.dbt

These CLISTS are executed using the following command:

ex ais.sysgen.clist(above CLIST)

2.4.3.6 Test The System After the data bases have been built, the user is ready to execute AISIM. Assuming the CLISTS have been set up as described in section 2.4.2, the user should be able to invoke AISIM by entering the command AISIM. The operation of AISIM should then be verified using the procedures in this manual.

USED AT	AUTHOR: J. KNEEBURG	DATE: 27 Oct. 81	WORKING	READER	DATE	CONTEXT
	PROJECT: ALSIM	REV	DRAFT			
	NOTES: 1 2 3 4 5 6 7 8 9 10		RECOMMENDED			
			PUBLICATION			



NUMBER	ALSIM OVERVIEW	TITLE

3. INSTALLATION TESTING

3.1 Test Descriptions

Installation testing of AISIM consists of verifying that all the components of the system work together properly. Figure 1 shows all these components and their relationships to one another. Five tests will be performed, each exercising one of the user interfaces and all of the components related to it.

3.1.1 Design User Interface Test Description The Design User Interface is used to create AISIM models. This includes the model entity definition which is performed under the Design User Interface, as well as the subordinate functions of the Process Editor Interface which is used to construct Processes, and the Architecture Design Editor which is used to specify a system architecture and its message routing characteristics. Test Procedure 3.4.1 is designed to show that the following capabilities are available:

- Create entities
- Copy entities
- Modify entities
- List entities
- Delete entities
- Save model data bases
- Add Process Primitives
- Change Process Primitives
- Delete Process Primitives
- Display various portion of Processes
- Creation of an architecture - placement of symbols and connections
- Definition of Resource attributes through symbol prototyping
- Movement of symbols and connections within architecture
- Windowing in architecture work space
- Creation of LPT both manually and automatically

3.1.2 Analysis User Interface Test Description The Analysis User Interface is used to run simulations of AISIM models. Test Procedure 3.4.2 is intended to show that the following capabilities are available:

- Translate models
- List certain entities
- Display certain entity statistics
- Modify certain entity values
- Establish breakpoints
- Cancel breakpoints
- Define plots
- Display plots
- Save plot sets (definitions or data)
- List saved plot sets
- Retrieve saved plot definition sets
- Run simulations

3.1.3 Replot User Interface Test Description The Replot User Interface is used to plot selected simulation results. Test Procedure 3.4.3 is designed to verify that the following capabilities are available:

- List saved plot sets (definitions or data)
- Retrieve saved plot data sets
- Display plots
- Delete saved plot sets

3.1.4 Hardcopy User Interface Test Description The Hardcopy User Interface is used to document the graphical description of model Processes. Processes can be plotted individually or all Processes in a model can be plotted. Test Procedure 3.4.4 is designed to verify that the following capabilities are available:

- User can specify paper size
- User can plot individual Processes

- User can plot all model Processes

3.1.5 Library User Interface Test Description The Library User Interface is used to access the four functions of the Library Function. The Library Function is used to check models into and out of a user's library or the system library, and to merge parts of libraries into and out of a user's data base. Test procedure 3.4.5 is designed to verify that the following capabilities are available:

- List the models in a library.
- List the contents of a specific library.
- Check a model out of a library.
- Merge in a model without conflicts.
- Resolve naming conflicts in a model to be merged into a data base.
- List entities in a data base.
- Select entities to be merged out.
- Check a model into a library
- Delete a model from a library.

3.2 Test Equipment

Installation testing will be performed on the version of AISIN which is to be rehosted on the MITRE Corporation IBM 3031 computer system. This testing will take place after rehost at the MITRE facility. MITRE must provide the following equipment for this testing:

- ♦ 1 HP2647A graphics terminal
- ♦ 1 HP2631G printer plotter connected to terminal with HPIB interface
- ♦ connection to computer system

3.3 Test Conditions

All input data will be entered by the tester in interactive mode. The specific inputs are listed in Section 3.4. No other test conditions apply to this test plan.

3.4 Test Procedures

The test procedures are presented in tabular form. Each includes a list of the functions to be performed, user commands and responses to perform the function, expected results of each command and function, and an area for recording the test results.

3.4.1 Design User Interface Test Procedure This test exercises the commands available in the Design User Interface. The test is structured such that results of functions which are not directly observable are verified as part of the test. For example, when a node is placed in the architecture with predefined Resource attributes, the presence of these attributes is verified later in the test.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Initiate an AISIM session EX AISIM	AISIM Executive Messages are displayed. AISIM READY prompt is displayed. displayed.	
2. Invoke Design User Interface d p(intgtest)	DUI messages displayed. Copy data base prompt displayed. User enters "yes". Data base is copied. "*" prompt is displayed.	
3. Edit one of each of the following entity types. e r,restest,new e i,itemtest,new e t,tabitest,new e a,acttest,new e v,vartest,new e c,contest,new e q,quetest,new e l,loadtest,new	Appropriate entity form is displayed. User enters random data into forms and enters them. "*" prompt is displayed.	
4. e s,scentest	Message is displayed indicating that "scentest" does not exist and the user is asked if (s)he wishes to create it. User enters "yes" and test proceeds as in 3 above.	
5. e, p,proctest,new	Process form is displayed. User enters random data into form and enters it. "#" prompt is displayed.	
6. menu	The menu of Primitive symbols is displayed.	
7. Place one of each Primitive type.		

p action
 p alloc
 p assign
 p branch
 p call
 p create
 p compare
 p dealloc
 p destroy
 p entry
 p eval
 p file
 p find
 p lock
 p loop
 p prob
 p reset
 p remove
 p resume
 p send
 p suspend
 p test
 p trace
 p unlock
 p wait

Each Primitive form is displayed. User enters miscellaneous data and enters form. "#" prompt is displayed. User issues next PLACE command.

8. Change selected Process Primitives.

c 1
 c 2
 c 3
 c 4
 c 5
 c 6

Change primitives shown on first page of Process. In response to change command, specified Primitive form is displayed with existing information. User changes information as desired and enters form. System responds by redrawing Primitive and displaying "#" prompt. "#" prompt.

9. Display portions of Process moving both up and down.

bottom
 u 13
 c 5
 top

User enters combination of movement commands. After each command, screen is erased and new portion of Process is displayed. "#" prompt is redisplayed.

10. Delete selected

Process Primitives.

```
del 5
del 2,2
del 13
```

Randomly select Primitives to be deleted. In response, the selected Primitive and those displayed below it are erased. Primitives below one selected are redrawn. "#" prompt displayed. Note that Primitives may only be deleted if presently shown on the screen.

11. Exit the Process Editor.

```
end
```

Screen is cleared and "*" prompt is displayed.

12. Copy one of each entity type.

```
copy r,restest,res2
copy i,itemtest,itm2
copy t,tabtest,tab12
copy a,acttest,act2
copy v,vartest,var2
copy c,contest,con2
copy q,quetest,q2
copy l,loadtest,load2
copy s,scentest,scen2
copy p,proctest,proc2
```

User enters list of commands, one at a time. After each command, "*" prompt is redisplayed.

13. Verify that Copy commands worked.

```
list r
list i
list t
list a
list v
list c
list q
list l
list s
list p
```

Appropriate entity list (original entities and copies). "*" prompt is redisplayed after each command.

14. Delete original of each entity type.

```
del r,restest
del i,itemtest
del t,tabtest
```

After each command, system performs processing and returns "*" prompt.

```
del a,acttest
del v,vartest
del c,contest
del q,quetest
del l,loadtest
del s,scentest
del p,proctest
```

15. List each entity type.

```
list r
list i
list t
list a
list v
list c
list q
list l
list s
list p
```

Appropriate entity list (copied entities only).
"*" prompt redisplayed after each command.

16. Save the data base.

```
save
```

Console beeps 5 times.
"*" prompt is returned.

17. Delete existing Resources and verify.
Create new Resource.

```
del r,*
list r
e r,archtest
```

Processing performed and
"*" prompt returned. User lists Resources to verify that all are deleted. System provides null list and returns "*" prompt. User enters new Resource, filling in Resource form and filling attribute form with miscellaneous information.

18. Edit an architecture.

```
a
```

Screen is cleared. Architecture grid is drawn.
"#" prompt is provided.

19. Definition of symbol/Resource prototypes for various symbols.

```

def sqr,archtest
def bus
def crd
def dia
def drm
def dsk
def lod
def pig
def prp
def ptr
def rec
def tap
def tri
def tty

```

After processing each command. The system returns a "#" prompt. The user should note that the form displayed is the same that was entered for the Resource archtest. After the user enters each command, the system displays the form for the specified symbol. The user should enter miscellaneous information into this form, being sure to enter "YES" in the "attributes field". After entering this form, an attribute form will be displayed. The user enters miscellaneous information into this form and enters it. The "#" prompt is returned.

20. Placement of symbols and connections.

```

p sqr,AA,20,20
p tri,BB,40,40
p lod,CC,60,60
con AA,CC,con1
con AA,BB,con2.F

```

Starting with these commands, create an architecture.

21. Move a symbol within the architecture.

```

move AA,30,30

```

Symbol is erased and redrawn at new location. Connection is replaced. "#" prompt is returned.

22. Redraw a connection within the architecture.

```

recon con3.F

```

Connection is erased and graphics cursor is displayed to user. Enter the connection again.

23. Window view space over work space.

```
win d,20
win u,10
win r,30
win l,20
win r,20,u,10
win l,10,d,30
```

Issue various window commands as shown at left. After each command screen is erased and redrawn at new location. "#" prompt is returned.

24. Manipulate LPT functions.

```
list lpt
```

LPT is listed in alpha memory of terminal. LPT should represent point-wise connection of adjacent nodes. "#" prompt is returned.

```
list path,AA,BB
list path,BB,CC
```

Should provide path only when adjacent nodes are specified. System responds with "NO SUCH PATH" for nonadjacent nodes. "#" prompt is displayed.

```
def path,BB,CC,con2.F,con1
```

User defines a path through several nodes. System processes command and displays "#" prompt.

```
list path,BB,CC
```

"From node" and "To node" should be the same nodes as used in processing command. Path just entered and all subpaths are displayed. "#" prompt is returned.

```
list lpt
```

LPT as above is listed but with defined path added. "#" prompt returned.

```
del,path,BB,CC
```

Use "from node" and "to node" as above. System processes command. Returns prompt.

```
list path,BB,CC
```

Use "from node" and "to node" as above. System responds with "NO SUCH PATH". Returns "#" prompt.

```
list lpt
```

LPT is listed as in last list lpt command except

deleted path is gone.
"#" prompt is displayed.

25. Change node and connection parameters.

chg name,CC,XX

Node name is changed on screen. " #" prompt returned.

list lpt

Note change to new node name in LPT. " #" prompt returned after listing of LPT.

chg size,BB,4
list lpt
chg type,AA.tty
list lpt

Appropriate changes made. After each command, list LPT and verify no change to LPT. " #" prompt displayed after each command in this sequence.

chg name,Con1,Conx
list lpt

Connection name is changed. List LPT to verify correct LPT change. " #" displayed after each command.

26. Save data base while in architecture.

save

Console beeps 5 times.
" #" prompt displayed.

27. End architecture session.

end

Screen is cleared. LPT message prompts are output.
" #" prompt displayed.

28. Verify LPT algorithm operation.

info

Messages output describing LPT algorithms. " #" prompt returned.

end

No LPT processing done.
" #" prompt displayed. User should reenter architecture, list lpt, and verify that no change has occurred. User then ends architecture

session again and uses next input as response to LPT generator prompt.

a

LPT algorithm A operates. Control is passed to DUI. "*" prompt displayed. User should reenter architecture, view LPT with "list lpt" and verify against the architecture. User then returns to DUI session, enters architecture editor, and receives LPT messages again.

b

LPT algorithm B operates. Same prompts and sequences should be reported as in previous step.

c

LPT algorithm C operates. Same as previous steps except upon reentering DUI, user performs following commands.

29. Verify architecture nodes are represented in list of Resources.

list r

List of Resources is displayed. User verifies presence of all architecture node and channel Resources, including .A and .B Resources for .F connections used in architecture.

e r,AA
(representing tty
in architecture)

Resource forms presented. User verifies presence of attributes as specified in Step 19. Repeat for triangle symbol. "*" prompt displayed after entering

30. Reenter Architecture

a

Grid redrawn. "#" prompt displayed.

31. Delete architecture nodes and connections

```
del conx
del con2.F,BB
del *
```

Use various delete commands as shown at left to verify use of each. Appropriate symbols and connections are deleted. "#" prompt displayed after processing of each command.

32. End architecture

```
end
```

Screen cleared. LPT generator prompt messages displayed. "#" prompt returned.

33. End LPT.

```
end
```

"*" prompt returned.

34. Save data base while in DUI.

```
save
```

Terminal "beeps" 5 times. "*" prompt returned.

35. End DUI.

```
end
```

Data base save/no save prompt. User responds yes or no as desired. If no, DUI ended and "AISIM READY" prompt is displayed. If yes, terminal "beeps" 5 times and then "AISIM READY" is displayed. displayed.

3.4.2 Analysis User Interface Test Procedure The analysis test procedure verifies three functions:

1. that a model data base created in a Design session can be translated by the Translate Function,
2. that the translated model can be initialized by the Analysis User Interface, and
3. that the Analysis User Interface commands can be successfully exercised against the initialized model.

FUNCTION/COMMANDSADDITIONAL INPUTS/
EXPECTED RESULTSTEST RESULTS

1. Model Input

Use Design User
Interface

Using the capabilities of the DUI, build a model described in Appendix B. Exit the DUI, saving the model data base, and return to the AISIM Ready level. User may instead wish to use test data base Testdbl provided with the installation tape. This is the same model listed in Appendix B.

2. Invoke the Analysis
User Interface (AUI)

a p(testdbl)

AUI messages are displayed. User is queried "Yes to proceed-No to abort". User enters "Yes". Translation of model data base is performed. Model initialization takes place. Prompt issued "NO ERRORS DETECTED IN MODEL TRANSLATION YOU MAY NOW ENTER COMMANDS". "#" prompt is also displayed.

3. List each entity type.

l c
l r
l p
l v
l q
l i

Appropriate list of entities is displayed and "#" prompt returned after each command. Check lists against Appendix B.

4. Define Plots-user selects
entity names to plot

def r,resource name
def q,queue name
def u,variable name
def p,process name
def i,item name

An attribute form for the selected entity type is displayed. Testor selects attribute and enters form. A statistic form is displayed. User selects statistic and enters form.

prompt is displayed.
This step can be repeated
to test various combina-
tions.

5. Set a breakpoint

```
set r,b1b2
```

Appropriate entity attri-
bute and statistic selec-
tion forms are displayed.
User enters forms and re-
ceives "#" prompt.

6. Initiate the simulation.

```
go
```

Simulation begins. When
breakpoint reached, simu-
lation is halted and user
is allowed to enter com-
mands. "#" prompt is dis-
played.

7. Display selected entity
statistics

```
lv r,b1b2  
lv r,h2  
lv i,msg  
lv stream
```

All statistics associated
with specified entity are
displayed.

8. Edit one of each legal
entity type

```
edit v,v.cs,.001  
edit stream,load,7
```

The screen is cleared and
the # prompt is returned.

9. Continue the simulation

```
go
```

Simulation continues until
terminated. Message indi-
cating normal termination
is displayed. User is al-
lowed to enter commands.
prompt displayed.

10. Display the plots in
various combinations.

```
plot
```

Menu of plots is displayed.
User selects desired plots.
Plots generated # prompt
displayed. User should re-
peat for various plots.

11. Save plot data and definitions

```
save def,defset1,
      definitions
save plot,plotset1,
      run1 results
```

Definitions & plots are saved. Screen is cleared after each command and "#" prompt is displayed.

12. List the saved plot sets and definition sets.

```
1 plot
1 def
```

The names of each Plot set and definition set and their descriptions are displayed. A "#" prompt is displayed.

13. Exit Analysis User Interface

```
end
```

Clear screen and AISIM Ready prompt.

14. Reenter AUI

```
a p(data base name)
```

See step 2.

15. Edit selected constants and variables to change simulation results.

```
edit v, select variable,
      select value
edit c, select constant,
      select value
```

See Step 8.

16. Set plot definitions

```
get def,defset1
```

Clear screen and # prompt returned.

17. Set a breakpoint

```
set r,b3b4
```

See step 5.

18. Cancel the breakpoint

```
can
```

Breakpoint is cancelled. Clear screen followed by new "#" prompt.

19. Set infinite resources

infres

Infinite resources set.
Clear screen followed by
new "#" prompt.

20. Execute simulation

go

Simulation executes. Normal
termination messages
displayed. "#" prompt dis-
played.

21. Save plot results

save plot,plotset2,run
2 results

Plot results saved. "#" prompt
displayed.

22. Exit AUI

end

See step 13

3.4.3 Replot User Interface Test Procedure The Replot User Interface Test Procedure will be used to test all Replot commands and all capabilities of the Replot function as described in section 3.1.3

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke the Replot User Interface		
replot p(project name)	Replot messages and prompt to continue followed by "\$" prompt.	
2. List set types		
l def l plot l title	l def lists all plot def- inition sets, l plot lists all plot data sets, l title lists current plot titles-- none at this point. "\$" prompt displayed.	
3. Retrieve each plot data set selecting plots from each set.		
get plot,plotset1 get plot,plotset2	Plot titles in each set are displayed. User is allowed to select specific plots which are put in the current set of plots.	
4. List titles		
l title	List of titles of current plots. "\$" prompt displayed.	
5. Display the plots in various combinations		
plot	Current plot titles are displayed for user selec- tion. After selection plot is generated and "\$" prompt is displayed.	
6. Clear the current plots.		
clear	Current plot information is purged. "\$" prompt is displayed.	
7. Repeat steps 2-5 selecting new plots	See steps 3-5	
8. Delete a plot set		

delete plot,plotset1

Plotset is deleted. "\$"
prompt is displayed.

9. Delete a definition set

delete def,defset1

Definition set is deleted.
"\$" prompt is displayed.

10. List sets

l def
l plot

List of remaining sets of
each type are displayed
followed by \$ prompt.

11. Exit the Replot User
Interface.

end

Screen is cleared. AISIM
READY prompt is displayed.

3.4.4 Hardcopy User Interface Test Procedure The Hardcopy User Interface verifies that the data interface between the AISIM system and the terminal is operating properly. It also verifies the actual operation of the AISIM software. It exercises the functions described in section 3.1.4.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke the Hardcopy User Interface - plot single Process.		
hcopy p(project name)	Hardcopy messages and prompt to continue. User is then prompted whether to plot all Processes or not. User enters no. User is prompted for paper size. User enters paper size. User prompted to position paper. User positions paper. User prompted for Processes to plot one at a time. Processes plotted. Return to AISIM READY level when user indicates desire to exit.	
2. Invoke the HUI-plot all Processes.		
hcopy p(project name)	Hardcopy messages and prompt to continue. User is then prompted whether to plot all Processes or not. User enters yes. User is prompted for paper size. User enters paper size. User prompted to position paper. User positions paper. Processes plotted. Return to AISIM Ready level.	
3.4.5 <u>Library User Interface Test Procedure</u> The four Library subfunctions are Checkin, Checkout, Mergein, and Mergeout. In the following test procedure all four of these functions are tested. Test steps associated with the testing of Checkout are preceded by an A or AA (i.e. A1, A2, A3, etc.). Mergein is preceded with a B (i.e. B1, B2, etc.). Likewise Mergeout and Checkin are preceded with C and D respectively.		

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
Access the Library Functions		
Library	Enter command at the AISIM Ready level. System responds with LIBRARY READY.	
A 1 Invoke the Checkout Function on the system library.		
co 1(system) b(testbuf)	System displays verification messages and prompt. User types yes. "You may now extract models from the library" is displayed as well as "*" prompt.	
A 2 List all models in the library.		
l *	All models in system library are listed. "*" prompt is displayed.	
A 3 List the contents of a specific model.		
l commun-a	For every legal entity type, all the entities of that type are displayed followed by "do you wish to continue listing the model?" query. User should respond yes until the "*" prompt is displayed after the Processes are listed.	
A 4 Flag a model for being Checked out		
ext commun-a	The model is flagged for extraction. "*" prompt displayed.	
A 5 Exit the Checkout Function		
end	A message is displayed when the Checkout has been com-	

pleted. The user is returned to the LIBRARY Ready level.

- B 1 Invoke the Mergein Function using the same buffer with an empty data base.

mi p(testdb) b(testbuf)
1(library)

Verification messages and prompt are displayed. User responds yes. User is asked if (s)he wants to create the project. User responds yes. Messages are displayed indicating no naming conflicts. Mergein operation completes and LIBRARY READY prompt is displayed.

- B 2 Invoke the Mergein Function again with naming conflicts.

mi p(testdb) b(testbuf)

Verification messages and prompt displayed. User responds yes. This time the system tells the user that 7 conflicts were detected and asks if the user wishes to resolve these conflicts. User responds yes.

- B 3 Resolve the naming conflicts.

(msg) rn message
(chiio) rp chiio
(control) ig
(esr-call) rn call-esr
(ihandler) rp
(req-i/o) ig
(router) ig

User responds to "option:" prompts and verification is given. Mergein operation is begun as soon as all naming conflicts are resolved.

- C 1 Invoke the Mergeout Function using the same buffer and data base

mo p(testdb) b(testbuf)

Verification messages and prompt displayed. User enters yes. User prompted

to reuse buffer. User enters yes. "*" prompt is displayed.

C 2 List entities in the data base.

1 item
1 var
1 process

Entities of the specified types are displayed. "*" prompt is displayed.

C 3 Select entities to be merged out.

s i,message
s p,chiio

Selected entities are flagged to be merged out.

C 4 Exit the Mergeout Function

end

The Mergeout operation is performed. The user is returned to the LIBRARY READY level.

D 1 Invoke the Checkin Function using the same buffer and an empty library.

ci 1(testlib) b(testbuf)

Verification messages and prompt displayed. User enters yes. User is asked if the library should be created. User enters yes.

D 2 Describe the model to be checked in.

(name) MODEL
<number>
<description>

The user is prompted for a name, a document reference number and a description. User is asked if library update is to be permanent. User enters yes.

AA 1 Invoke the Checkout Function using the same buffer and library.

co 1(testlib) b(testbuf)

Verification messages and prompt displayed. User

enters yes. "*" prompt
displayed.

AA 2 List all models in the
data base.

l *

Names of models in the
data base are listed.

AA 3 List the contents of
the previously checked
in model.

l model

The entities of model are
listed as in A 3 above.

AA 4 Delete the model from
the library.

d model

The model is deleted. "*" prompt is displayed.

AA 5 Verify the deletion
with the list command.

l *

Existing models are listed.

AA 6 Exit the Checkout
Function.

end

User is returned to the
LIBRARY READY level.

Exit the Library level

end

User is returned to the
AISIM READY level.

4. ACCEPTANCE TESTING

Acceptance testing consists of verifying all the operational requirements of the system. Acceptance testing for AISIM consists of the foregoing Installation Tests as well as the tests described in the following paragraphs. The combination of these tests provides for verification of user interface software (Installation Test Procedures), exercise of all Library, Hard-copy, Replot, and Design functions (Installation Test Procedures), verification of the Translator (Installation Tests and Acceptance Test) and verification of the AISIM simulator (Acceptance Tests). As can be seen the Installation Tests cover all system capabilities except the AISIM simulator. Its capabilities are fully exercised by the five Acceptance Tests. Table 1 shows a cross reference of Acceptance Tests and functional requirements of the simulator tested by each test.

TABLE 1
ACCEPTANCE TESTING
FUNCTIONAL REQUIREMENTS CROSS-REFERENCE

	1	2	3	4	5
Random Number Seed					X
Random Sampling by Variable Dist.				X	X
Arithmetic Constructs	X			X	X
Parameter Passing	X	X		X	X
Terminal Interface - Simulate for Multiple Periods				X	
Statistical Summary Precision				X	
Queue Manipulation			X	X	
Resource Logic		X	X	X	
Keywords		X		X	
Protocol Processes				X	
Resource Manipulation		X		X	
Process Triggering	X		X	X	X

4.1 Acceptance Testing Procedures

Each of the five Acceptance Tests are executed using the same procedure. The following paragraph describes this procedure and all associated information necessary to perform the tests.

4.1.1 Locate Acceptance Tests Data Bases Included on the delivered system tape are five files labeled TESTDBA.DBF, TESTDBB.DBF, TESTDBC.DBF, TESTDBD.DBF, and TESTDBE.DBF. Each of these files are model data bases that contain model definitions which when simulated exercise a different portion of the simulator. The data bases TESTDBA through TESTDBE are used in tests 1 through 5 respectively. When the system tape was read onto disk, these files were read onto the user ID specified in the JCL job steps.

4.1.2 Verify Test Data Bases To insure that no errors were introduced into the test data bases during tape reads, etc. during rehost, each data base should be verified. This is done by entering AISIM and executing the Analyze command specifying the test data base to be verified. For example to verify test data base TESTDBA.DBF the testor should enter:

a p(testdba)

In response the system will issue Analysis User Interface messages and prompt for a continuation indication. After the user enters "yes", the Translator will be called and the test data base will be translated and initialized. The system should issue the message:

NO ERRORS DETECTED IN MODEL TRANSLATION
YOU MAY NOW ENTER COMMANDS

If errors are detected, the test data base is not usable. If the prompt is issued as shown above the user should also verify all values within the model. This is done by exiting the Analyze function and obtaining a listing of the report.data file for that data base. For example, to verify the values for TESTDBA.DBF the user should list the testdba.report.data file. The user should then do a line by line comparison of this listing to the listing provided in Appendix C for the given data base. If any difference is detected, the test data base is unusable. This validation step should be repeated against each test data base.

4.1.3 Perform Test Enter the AISIM system and execute the Analyze command specifying the test data base to be executed. For example to execute test 1, test data base TESTDBA.DBF should be executed by issuing the analyze command as follows:

a p(testdba)

For tests 2-5, this command would be altered by inserting testdbb

through testdbe respectively. When the prompt:

NO ERRORS DETECTED IN MODEL TRANSLATION
YOU MAY NOW ENTER COMMANDS

is displayed, the user should enter "go". This will execute the simulation and the following prompt should be displayed:

SIMULATION ENDED - NORMAL TERMINATION
YOU MAY NOW ENTER COMMANDS

Any other response indicates an error. The testor should then list the "test".report.data file for the test just executed where "test" is replaced by the name of the test data base just executed. For example, to obtain the report for Test 1 which uses TESTDBA.DBF the file to be listed is testdba.report.data. The testor then performs a line by line comparison of the listing obtained in this way with the corresponding test results listing provided in Appendix D. Any differences indicate an error. This step is repeated for each test data base.

APPENDIX A

JCL FILES FOR THE TAPES

```

**** ISO FOREGROUND HA-COPY ****
DSNAME=TF01503 AIS TAPE CHIL                                (CP-E-C 1)

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF08507.AIS,LIBUTIL LOAD,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(100,20,2),RLSE),UNIT=DISK,
// DCB=(RECFM=U,LRECL=96,BLKSIZE=19069)
//INPDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=U,LRECL=96,BLKSIZE=19069,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF08507.AIS,SYSTEM LOAD,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(100,20,2),RLSE),UNIT=DISK,
// DCB=(RECFM=U,LRECL=96,BLKSIZE=19069)
//INPDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(2,1,1),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=U,LRECL=96,BLKSIZE=19069,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF08507.AIS,CONTRL CLIST,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(20,5,10),RLSE),UNIT=DISK,
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=1680)
//INPDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(3,1,1),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=1680,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF08507.AIS,USER CLIST,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(5,1,5),RLSE),UNIT=DISK,
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=1680)
//INPDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(4,1,1),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=1680,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF08507.AIS,MESSAGES.TEXT,
//INPDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(5,1,1),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=1680,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

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// SPACE=(TRK,(5,1,10),RLSE),UNIT=DISK,
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=6160)
//INFDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(5,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=6160,DEN=3)
//SYSTIN DD
// COPY OUTDD=RESERVE
// INDD=INPOS

// EXEC PGM=IEBPCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF09507,AIS=VERSION.TEXT,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(5,1,5),RLSE),UNIT=DISK,
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=6160)
//INFDS DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(6,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=6160,DEN=3)
//SYSTIN DD
// COPY OUTDD=RESERVE
// INDD=INPOS

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSTIN DD DUMMY
//SYSTOUT DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(7,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=800,BLKSIZE=800,DEN=3)
//SYSTUT2 DD DSN=TF08507,AIS=START08.DBT,
// UNIT=DISK,DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(1,1,1),RLSE),
// DCB=(RECFM=VB,LRECL=800,BLKSIZE=800)

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSTIN DD DUMMY
//SYSTOUT DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(8,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=800,BLKSIZE=800,DEN=3)
//SYSTUT2 DD DSN=TF03507,AIS=MODEL.START08.DBT,
// UNIT=DISK,DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(1,1,1),RLSE),
// DCB=(RECFM=VB,LRECL=800,BLKSIZE=800)

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSTIN DD DUMMY
//SYSTOUT DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(9,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=VB,LRECL=800,BLKSIZE=800,DEN=3)
//SYSTUT2 DD DSN=TF05507,AIS=PLOT.START08.DBT,
// UNIT=DISK,DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(1,1,1),RLSE),
// DCB=(RECFM=VB,LRECL=800,BLKSIZE=800)

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSTIN DD DUMMY
//SYSTOUT DD UNIT=TAPE,VOL=SER=AISEX2,SPACE=(1,1,1),
// LABEL=(10,NL),DISP=(OLD,PASS,KEEP),

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```

** EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT1 DD UNIT=TAPE,VOL=SER=ATSEX2,SPACE=(1,(1,1)),
// LABEL=(16,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096,DEN=3)
//SYST2 DD DSN=TF08507,TESTOBE,CBF,
// UNIT=DISK,DISP=(NEW,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(25,10),RLSE),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)
** EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT1 DD UNIT=TAPE,VOL=SER=ATSEX2,SPACE=(1,(1,1)),
// LABEL=(17,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096,DEN=3)
//SYST2 DD DSN=TF08507,TESTOBE,CBF,
// UNIT=DISK,DISP=(NEW,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(25,10),RLSE),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)
** EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT1 DD UNIT=TAPE,VOL=SER=ATSEX2,SPACE=(1,(1,1)),
// LABEL=(18,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096,DEN=3)
//SYST2 DD DSN=TF08507,TESTOBE,CBF,
// UNIT=DISK,DISP=(NEW,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(25,10),RLSE),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)
** EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SYSUT1 DD UNIT=TAPE,VOL=SER=ATSEX2,SPACE=(1,(1,1)),
// LABEL=(19,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096,DEN=3)
//SYST2 DD DSN=TF08507,TESTOBE,CBF,
// UNIT=DISK,DISP=(NEW,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(25,10),RLSE),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)

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// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
// PGM=IEBCOPY DD DSN=TF08507.AIS.IOLIB.ASM,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(5,5,2),RLSE),UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
// LABEL=(11,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4160,DEN=3)
//SYSDN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
// PGM=IEBCOPY DD DSN=TF08507.ADEMS.DBLIB.FORT,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(10,10,20),RLSE),UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3360)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
// LABEL=(12,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3360,DEN=3)
//SYSDN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
// PGM=IEBCOPY DD DSN=TF08507.ADEMS.FLIB.FORT,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(5,5,3),RLSE),UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3360)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
// LABEL=(13,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3360,DEN=3)
//SYSDN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
// PGM=IEBCOPY DD DSN=TF08507.AIS.ADEBL.FORT,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(10,5,7),RLSE),UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
// LABEL=(14,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
// PGM=IEBCOPY DD DSN=TF08507.AIS.ADELIB.FORT,
// DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
// SPACE=(TRK,(10,10,15),RLSE),UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
// LABEL=(15,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

```

```

// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
// SYSIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
// SYSPRINT DD SYSOUT=A
// RESERVE DD DSN=TF03507.AIS,AUTLIB,FORMAT,
// DISP=(NEW,CATLG,DELETE),VOL=SER=TS0006,
// SPACE=(TRK,(10,5,3)),RLSE,UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
// INPDS DD UNIT=TAPE,VOL=SER=AISS92,SPACE=(1,1,1),
// LABEL=(16,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
// SYSIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
// SYSPRINT DD SYSOUT=A
// RESERVE DD DSN=TF03507.AIS,AUTLIB,FORMAT,
// DISP=(NEW,CATLG,DELETE),VOL=SER=TS0006,
// SPACE=(TRK,(15,5,3)),RLSE,UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)
// INPDS DD UNIT=TAPE,VOL=SER=AISS92,SPACE=(1,1,1),
// LABEL=(17,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,DEN=3)
// SYSIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
// SYSPRINT DD SYSOUT=A
// RESERVE DD DSN=TF03507.AIS,CLIB,FORMAT,
// DISP=(NEW,CATLG,DELETE),VOL=SER=TS0006,
// SPACE=(TRK,(10,5,3)),RLSE,UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
// INPDS DD UNIT=TAPE,VOL=SER=AISS92,SPACE=(1,1,1),
// LABEL=(18,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
// SYSIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
// SYSPRINT DD SYSOUT=A
// RESERVE DD DSN=TF03507.AIS,COXLAT,FORMAT,
// DISP=(NEW,CATLG,DELETE),VOL=SER=TS0006,
// SPACE=(TRK,(5,5,3)),RLSE,UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)
// INPDS DD UNIT=TAPE,VOL=SER=AISS92,SPACE=(1,1,1),
// LABEL=(19,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,DEN=3)
// SYSIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
// SYSPRINT DD SYSOUT=A
// RESERVE DD DSN=TF03507.AIS,COXLAT,FORMAT,
// DISP=(NEW,CATLG,DELETE),VOL=SER=TS0006,
// SPACE=(TRK,(5,5,3)),RLSE,UNIT=DISK,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)
// INPDS DD UNIT=TAPE,VOL=SER=AISS92,SPACE=(1,1,1),
// LABEL=(19,NL),DISP=(OLD,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,DEN=3)
// SYSIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS

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//      DISP=NEW,CATLG,CATLG, VOL=SER=TS0006,
//      SPACE=TRK,(15,5,2),RLSE,UNIT=DISK,
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=AISSP2,SPACE=(1,1,1),
//      LABEL=(20,HL),DISP=(OLD,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DCB=3)
//SYSIN DD
//      COPY OUTDD=RESERVE
//      INCO=INPDS

//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS,OLIB,FB,
//      DISP=NEW,CATLG,CATLG, VOL=SER=TS0006,
//      SPACE=TRK,(15,5,2),RLSE,UNIT=DISK,
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=AISSP2,SPACE=(1,1,1),
//      LABEL=(21,HL),DISP=(OLD,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DCB=3)
//SYSIN DD
//      COPY OUTDD=RESERVE
//      INCO=INPDS

//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS,OLIB,FB,
//      DISP=NEW,CATLG,CATLG, VOL=SER=TS0006,
//      SPACE=TRK,(15,5,2),RLSE,UNIT=DISK,
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=AISSP2,SPACE=(1,1,1),
//      LABEL=(22,HL),DISP=(OLD,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DCB=3)
//SYSIN DD
//      COPY OUTDD=RESERVE
//      INCO=INPDS

//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS,FAST,FB,
//      DISP=NEW,CATLG,CATLG, VOL=SER=TS0006,
//      SPACE=TRK,(15,5,2),RLSE,UNIT=DISK,
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=AISSP2,SPACE=(1,1,1),
//      LABEL=(23,HL),DISP=(OLD,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DCB=3)
//SYSIN DD
//      COPY OUTDD=RESERVE
//      INCO=INPDS

//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS,HLIB,FB,
//      DISP=NEW,CATLG,CATLG, VOL=SER=TS0006,
//      SPACE=TRK,(15,5,2),RLSE,UNIT=DISK,
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=AISSP2,SPACE=(1,1,1),
//      LABEL=(24,HL),DISP=(OLD,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DCB=3)
//SYSIN DD
//      COPY OUTDD=RESERVE

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// INDD=INPDS
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.LPTLIB.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(15,5,20),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(25,NL),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.LPTLIB.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(10,5,3),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6400)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(26,NL),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6400,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.LPTLIB.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(5,5,3),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(27,NL),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.LPTLIB.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(15,5,3),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(28,NL),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.LPTLIB.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(25,10,15),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(29,NL),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

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//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.XLATL19.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(5,5),2),RLSE,UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(3,ML),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS
/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.XLATL19.FORT,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(10,5),3),RLSE,UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(3,ML),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS
/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.CHECKIN.DATA,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(70,20,2),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(1,36,ML),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS
/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.MERGEIN.DATA,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(85,20,2),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(1,37,ML),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS
/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//RESERVE DD DSN=TF03507.AIS.SIMULATOR.DATA,
//DISP=(NEW,CATLG,CATLG),VOL=SER=TS0006,
//SPACE=(TRK,(100,20,2),RLSE),UNIT=DISK,
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//INPDS DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//LABEL=(1,39,ML),DISP=(OLD,PASS,KEEP),
//DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

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//SYSTN DD
COPY OUTDD=RESERVE
INDD=INPOS

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**** TSO FOREGROUND HARD COPY ****
DSNAME=TF01533.AIS.TAPE UNIT
(CPFSRJCL)

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DDNAME
//
//      DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=1,(1,1),
//          LABEL=13,INL1,DISP=1010,PASS=KEEP,
//          DCB=(RECFM=FB,LRECL=60,BLKSIZE=6160,DEN=3)
//SYSD2  DD DSNAME=TF03507.CPF-SEC.CMTL,
//          UNIT=DISK,DISP=1010,CATLG,CATLG, VOL=SER=TS0006,
//          SPACE=(TRF,15,2),RLSE=,
//          DCB=(RECFM=FB,LRECL=60,BLKSIZE=6160)
//
// *

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**** ISO F505FOUND HAPDCOPY ****
NAME=TF01509,AIS,TAPE,CHTL (CUTEXC)

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01509,AIS,LIBUTIL,LOAD,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATSEK2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=U,RECL=96,BLKSIZE=1906, DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
//DD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01509,AIS,SYSTEM,LOAD,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATSEK2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=U,RECL=96,BLKSIZE=1906, DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
//DD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01509,AIS,CONTRL,CLIST,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATSEK2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=U,RECL=255,BLKSIZE=1680, DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
//DD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01509,AIS,USER,CLIST,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATSEK2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=U,RECL=255,BLKSIZE=1680, DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
//DD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01509,AIS,MESSAGES,TEXT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATSEK2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=U,RECL=255,BLKSIZE=1680, DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
//DD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01509,AIS,MESSAGES,TEXT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATSEK2,SPACE=(1,1,1),
// LABEL=(1,1,1),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=U,RECL=255,BLKSIZE=1680, DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
//DD=INPDS

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**** TSO FORCED HARD COPY ****
DSNAME=TF01503.AIS TAPE CNTL          (CUTSRC )

// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SISUT2 DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//          LABEL=(1,8LPI),DISP=(NEW,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SISUT1 DD DSN=TF01503.AIS.00L DATA,
//          UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SISUT2 DD UNIT=TAPE,VOL=SER=ATSSR3,SPACE=(1,1,1),
//          LABEL=(2,8LPI),DISP=(NEW,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=90,BLKSIZE=6160,DEN=3)
//SISUT1 DD DSN=TF01503.AIS.MODEL.00L DATA,
//          UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SISUT2 DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//          LABEL=(3,8LPI),DISP=(NEW,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=30,BLKSIZE=6160,DEN=3)
//SISUT1 DD DSN=TF01503.AIS.PLOT.00L DATA,
//          UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SISUT2 DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//          LABEL=(4,8LPI),DISP=(NEW,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=105,BLKSIZE=1060,DEN=3)
//SISUT1 DD DSN=TF01503.AIS.KERNEL.ADEGRAPH.DATA,
//          UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SISUT2 DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//          LABEL=(5,8LPI),DISP=(NEW,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=105,BLKSIZE=1060,DEN=3)
//SISUT1 DD DSN=TF01503.AIS.KERNEL.FCRISPEC.DATA,
//          UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY
//SISUT2 DD UNIT=TAPE,VOL=SER=ATSSR2,SPACE=(1,1,1),
//          LABEL=(6,8LPI),DISP=(NEW,PASS,KEEP),
//          DCB=(RECFM=FB,LRECL=30,BLKSIZE=6160,DEN=3)
//SISUT1 DD DSN=TF01503.AIS.KERNEL.GRAPHICS.DATA,
//          UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//
// EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A

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//SYSDM DD DUMMY
//SYSDT DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
//      LABEL=(7,BLP),DISP=(NEW,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDT1 DD DSN=TF01508,AIS=SER=AISSR2,SPACE=(1,1,1),
//      UNIT=DISK,DISP=(OLD,KEEP,KEEP)
//      *
//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508,AIS=SYSSEM.CNTL,
//      DISP=(OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
//      LABEL=(8,BLP),DISP=(NEW,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=1680,DEN=3)
//SYSDM DD
//      COPY OUTDD=RESERVE
//      INDD=INPDS
//      *
//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508,AIS=SYSSEM.LINK.CNTL,
//      DISP=(OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
//      LABEL=(9,BLP),DISP=(NEW,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=800,DEN=3)
//SYSDM DD
//      COPY OUTDD=RESERVE
//      INDD=INPDS
//      *
//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508,ADAMS.SLIB.ASM,
//      DISP=(OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
//      LABEL=(10,BLP),DISP=(NEW,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=1680,DEN=3)
//SYSDM DD
//      COPY OUTDD=RESERVE
//      INDD=INPDS
//      *
//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508,AIS.IOLIB.ASM,
//      DISP=(OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
//      LABEL=(11,BLP),DISP=(NEW,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=4160,DEN=3)
//SYSDM DD
//      COPY OUTDD=RESERVE
//      INDD=INPDS
//      *
//      EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508,ADAMS.OBLIB.FORT,
//      DISP=(OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
//      LABEL=(12,BLP),DISP=(NEW,PASS,KEEP),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=3360,DEN=3)
//SYSDM DD
//      COPY OUTDD=RESERVE

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// DISP=OLD,KEEP,KEEP)
// RECFM=U UNIT=TAPE, VOL=SER=AISSR2, SPACE=(1,1,1),
// LABEL=(19,BLPI),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,OPEN=3)
//SYSDIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS
//
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS,CONCAT=,FORT,
// DISP=OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2, SPACE=(1,1,1),
// LABEL=(19,BLPI),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,OPEN=3)
//SYSDIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS
//
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS,CBOLIB=,FORT,
// DISP=OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2, SPACE=(1,1,1),
// LABEL=(20,BLPI),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,OPEN=3)
//SYSDIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS
//
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS,CBOLIB=,FORT,
// DISP=OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2, SPACE=(1,1,1),
// LABEL=(21,BLPI),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,OPEN=3)
//SYSDIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS
//
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS,CBOLIB=,FORT,
// DISP=OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2, SPACE=(1,1,1),
// LABEL=(22,BLPI),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,OPEN=3)
//SYSDIN DD
// COPY OUTDD=RESERVE
// INDD=INPDS
//
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS,FAST=,FORT,
// DISP=OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2, SPACE=(1,1,1),
// LABEL=(23,BLPI),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,OPEN=3)
//SYSDIN DD

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COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(24,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(25,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=90,BLKSIZE=6160,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(26,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6400,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(27,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(28,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(29,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.HCLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(30,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSDIN DD
//SYSDOUT DD
COPY OUTDD=RESERVE
INDD=INFDS

```

```

//INPDS DD DSN=TF01508.AIS.LPT.LIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATISSR2,SPACE=(1,1,1),
// LABEL=(33,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.MOALAT.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATISSR2,SPACE=(1,1,1),
// LABEL=(30,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.OFOLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATISSR2,SPACE=(1,1,1),
// LABEL=(31,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=400,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.PLOTLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATISSR2,SPACE=(1,1,1),
// LABEL=(32,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.PLOTLIB.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATISSR2,SPACE=(1,1,1),
// LABEL=(33,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.TTYAUI.FORT,
// DISP=OLD,KEEP,KEEP)
//RESERVE DD UNIT=TAPE,VOL=SER=ATISSR2,SPACE=(1,1,1),
// LABEL=(34,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

```

```

//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.XLATLIB.FORT,
// DISP=(OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(135,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=30,BLKSIZE=400,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.CHECKIN.DATA,
// DISP=(OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(135,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.MERGEIN.DATA,
// DISP=(OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(137,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//INPDS DD DSN=TF01508.AIS.SIMULATOR.DATA,
// DISP=(OLD,KEEP,KEEP)
// RESERVE DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(138,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSIN DD
COPY OUTDD=RESERVE
INDD=INPDS

/*
// EXEC PGM=IEBCOPY,PARM='SIZE=100K'
//SYSPRINT DD SYSOUT=A
//SYSD2 DD UNIT=TAPE,VOL=SER=AISSR2,SPACE=(1,1,1),
// LABEL=(139,BLP),DISP=(NEW,PASS,KEEP),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160,DEN=3)
//SYSUT1 DD DSN=TF01508.CRM.SPC.CNTL,
// UNIT=DISK,DISP=(OLD,KEEP,KEEP)

```

APPENDIX B

MODEL DESCRIPTION FOR INSTALLATION TESTING SUPPORT

PAGE 1

```

#####
S I M U L A T I O N   R E P O R T
#####
      ATSIM VERSION 2.0
      HUGHES AIRCRAFT COMPANY
      08/03/81
#####
GLOBAL CONSTANT DEFINITION.....

```

```

CONSTANT INITIAL      COMMENT
=====
SECS/CHR 0.167  MSLONDS PER CHARACTER SERIAL TRANSFER
=====

```

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

```

VARIABLE INITIAL      COMMENT
=====
MONITOR V. VALUE      COMMENT
=====
V.ROUTER 0  MONITOR VARIABLE TO PLOT ROUTE OVERHEAD (COMPUTED)
V.DCS 0.001  CONTEXT SWITCHING DELTA TIME
V.MCS 0.050  CONTEXT SWITCHING MEAN TIME
=====

```

ITEM DEFINITION.....

ITEM DESCRIPTION

```

=====
P50
ATTR. INITIAL
NAME VALUE
=====
CHCODE $CHCODE
PRCODE $CHCODE
LEPMTH 99999999
PLASK $EPPOR
RESPONSE SHAIT
RTASK $EPPOR
TACUPPI 99999999
TNCODE $CHODE
TYPE SPEQ
=====

```

QUEUE DEFINITION.....

PAGE 2
 QUEUE MAXIMUM
 PNEUMONIC SIZE COMMENT
 =====

RESOURCE DEFINITION.....
 RESOURCE TOTAL INITIAL
 PNEUMONIC 8 UNITS 8 UNITS DESCRIPTION
 =====
 BUFFER 1 1 BUFFER
 ATTP. INITIAL
 NAME VALUE
 =====
 COST 0

B1 1 1 RESOURCE FOR CPU NODE
 ATTP. INITIAL
 NAME VALUE
 =====
 COST 0
 D.CS 0
 M.CS 2
 M.ROUTE 0

B1B2 1 1 RESOURCE FOR CHANNEL CONNECTOR
 ATTP. INITIAL
 NAME VALUE
 =====
 COST 0
 RATE 56

B2 1 1 RESOURCE FOR CPU NODE
 ATTP. INITIAL
 NAME VALUE
 =====
 COST 0
 D.CS 0
 M.CS 2
 M.ROUTE 0
 RATE 167

B2B3 1 1 RESOURCE FOR CHANNEL CONNECTOR
 ATTP. INITIAL
 NAME VALUE
 =====
 COST 0
 RATE 28

B3 1 1 RESOURCE FOR CPU NODE

PAGE 3

ATTP.	INITIAL
NAME	VALUE
COST	0
D.CS	0
H.CS	2
M.POUTE	0
RATE	167

RESOURCE FOR CHANNEL CONNECTOR

ATTP.	INITIAL
NAME	VALUE
COST	0
RATE	20

RESOURCE FOR CPU NODE

ATTP.	INITIAL
NAME	VALUE
COST	0
D.CS	0
H.CS	2
M.POUTE	0

RESOURCE FOR CHANNEL CONNECTOR

ATTP.	INITIAL
NAME	VALUE
COST	0
RATE	20

RESOURCE FOR CPU NODE

ATTP.	INITIAL
NAME	VALUE
COST	0
D.CS	0
H.CS	2
M.POUTE	0
RATE	167

RESOURCE FOR CHANNEL CONNECTOR

ATTP.	INITIAL
NAME	VALUE
COST	0
RATE	20

COST
DATE 167

RESOURCE FOR NODE H1

1
ATTR. INITIAL
NAME VALUE
=====

COST 0
D.CS 0
M.CS 0
M.ROUTE 0

RESOURCE FOR NODE

1
ATTR. INITIAL
NAME VALUE
=====

COST 0
D.CS 0
M.CS 0
M.ROUTE 0
DATE 167

RESOURCE FOR NODE

1
ATTR. INITIAL
NAME VALUE
=====

COST 0
D.CS 0
M.CS 0
M.ROUTE 0

RESOURCE FOR NODE

1
ATTR. INITIAL
NAME VALUE
=====

COST 0
D.CS 0
M.CS 0
M.ROUTE 0

RESOURCE FOR NODE

1
ATTR. INITIAL
NAME VALUE
=====

COST 0
D.CS 0
M.CS 0
M.ROUTE 0

PAGE 7 1 1 RESOURCE FOR NODE
 M6 ATTR. INITIAL
 NAME VALUE
 =====
 COST 0
 O.CS 0
 M.CS 0
 M.POUTE 0

ARCHITECTURE LEGAL PATH DEFINITION

FROM DEVICE	TO DEVICE	NEXT DEVICE	VIA LINK
B1	B2	B2	B1B2
B1	B3	B2	B1B2
B1	B4	B2	B1B2
B1	B5	B2	B1B2
B1	B6	B2	B1B2
B1	H1	H1	H91.B
B1	H2	B2	B1B2
B1	H3	B2	B1B2
B1	H4	B2	B1B2
B1	H5	B2	B1B2
B1	H6	B2	B1B2
B2	B1	B3	B2B3
B2	B3	B3	B2B3
B2	B4	B3	B2B3
B2	B5	B3	B2B3
B2	B6	B3	B2B3
B2	H1	B3	B2B3
B2	H2	H2	H82.B
B2	H3	B3	B2B3
B2	H4	B3	B2B3
B2	H5	B3	B2B3
B2	H6	B3	B2B3
B3	E1	B4	B3B4
B3	E2	B4	B3B4
B3	E3	B4	B3B4
B3	E4	B4	B3B4
B3	E5	B4	B3B4
B3	E6	B4	B3B4
B3	H1	B4	B3B4
B3	H2	B4	B3B4
B3	H3	H3	H93.B
B3	H4	B4	B3B4
B3	H5	B4	B3B4
B3	H6	B4	B3B4
B4	B1	B5	B4B5
B4	B2	B5	B4B5

PAGE

6

B4E5	B5	B3	B5
B4E5	B5	B5	B5
B4E5	B5	B6	B5
B4E5	B5	M1	B5
B4E5	B5	M2	B5
B4E5	B5	M3	B5
HE4.B	H4	H4	H4
B4E5	B5	M5	B5
B4E5	B5	M6	B5
B5E6	B6	B1	B6
B5E6	B6	B2	B6
B5E6	B6	B3	B6
B5E6	B6	B4	B6
B5E6	B6	B6	B6
B5E6	B6	M1	B6
B5E6	B6	M2	B6
B5E6	B6	M3	B6
B5E6	B6	M4	B6
HE5.B	M5	M5	M5
B5E6	B6	M6	B6
B5E6	B6	E1	B1
B6E1	E1	B2	E1
B6E1	E1	B3	E1
B6E1	E1	F4	E1
B6E1	E1	B5	E1
B6E1	E1	B6	E1
B6E1	E1	M2	E1
B6E1	E1	M3	E1
B6E1	E1	M4	E1
B6E1	E1	M5	E1
B6E1	E1	M6	E1
HB6.B	M6	M6	M6
HB1.A	B1	B1	B1
HB1.A	B1	B2	B1
HB1.A	B1	B3	B1
HB1.A	B1	B4	B1
HB1.A	B1	B5	B1
HB1.A	B1	B6	B1
HB1.A	B1	M2	B1
HB1.A	B1	M3	B1
HB1.A	B1	M4	B1
HB1.A	B1	M5	B1
HB1.A	B1	M6	B1
HB2.A	B2	B1	B2
HB2.A	B2	B2	B2
HB2.A	B2	B3	B2
HB2.A	B2	B4	B2
HB2.A	B2	B5	B2
HB2.A	B2	B6	B2
HB2.A	B2	M1	B2

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ACTION	ACTION	CLASS	CONTENT
1	2	3	4

PROCESS DEFINITION.....

ENTRÉE	OPCODE	PARM	PARM	PARM	COMMENT
1					
2					
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125					
126					

CALL	THAMTLER NORMAL	INDICATE INTERRUPT IN NEXT MSG
GIVEN MSG		

1

PAGE 11
END

LOCAL VARIABLES OF PROCESS CHLIO

```
=====
1 MSG (1) 2 TO.NODE 3 NXT.NODE 4 CHANNEL
5 VSPEED 6 VLENGTH 7 VN.OVRD 8 XFER.ON (A)
9 HANDLER (P)
=====
```

PROCESS

DESCRIPTION

=====

OPERATING SYSTEM : CONTEXT SWITCHING

CONTROL

```
=====
ENTRY OPCODE PAPH PARM PAPH COMMENT
=====
STAY ALL NO
GIVEN MSG
ASSIGN MSG CNODE
CP
ALLOP CP M.CS
ASSIGN CP M.OVRD
ASSIGN CP D.CS
CS.ON CONSTANT M.OVRD
COMPARE MSG TYPE EQ
ASSIGN MSG REQ PTASK
RESUME TASK
BRANCH TASK
ENTRY DESTROY 100
ASSIGN MSG RTASK
CALL PROCESS WAIT 0
GIVEN MSG
RETURN MSG
COMPARE MSG RESPONSE EQ IF WAIT -> SEND MSG BACK
ASSIGN $WAIT DESTROY
MSG $RESP TYPE
ASSIGN MSG FNODE
MSG MSG TNODE
ASSIGN MSG CNODE
MSG MSG FNODE
CALL POINTER WAIT 0
GIVEN MSG
BRANCH END 100
ENTRY DESTROY
=====
```

PAGE 12 DESTROY MSG NO RESPONSE-TERMINATE MSG
 ENTRY DEALLOC CP INDICATE CP SWITCH DONE
 END

LOCAL VARIABLES OF PROCESS CONTROL
 =====
 1 MSG (1) 2 CP 3 M.OVHD 4 D.OVHD
 5 CS.OH (A) 6 TASK 7 PROCESS (X) 8 ROUTER (P)

PROCESS
 MEMONIC
 =====
 ESP-CALL DESCRIPTION
 =====
 OPERATING SYSTEM: EXECUTIVE SERVICE REQUEST (CALL)

ENTRY OPCCDE PAPH PAPH PAPH COMMENT
 =====
 START ALL NO
 GIVEN MSG
 ASSIGN TASK
 MSG PTASK
 ASSIGN MSG RESPONSE
 RESP.OPT
 CALL ROUTER WAIT 0
 GIVEN MSG
 COMPARE RESP.OPT EQ
 Suspend \$NOWAIT
 ENTRY EQ
 END

\$TASK= INSTANCE TO RESUME
 OPTION= \$WAIT OF \$NOWAIT
 INITIATE ROUTING TO DEST.
 SHOULD PARENT SUSPEND ?
 PROCESS CALLED WAIT
 CONTINUE OR RESUME POINT

LOCAL VARIABLES OF PROCESS ESP-CALL
 =====
 1 MSG (1) 2 RESP.OPT 3 ROUTER (P)
 PROCESS
 MEMONIC
 =====
 IMA'DLEP DESCRIPTION
 =====
 OPERATING SYSTEM : INTERRUPT HANDLING AND ROUTING

ENTRY OPCCDE PAPH PAPH PAPH COMMENT
 =====
 START ALL NO
 GIVEN MSG
 ASSIGN MSG CNODE
 CP
 COMPARE MSG CNODE EQ
 MSG THODE CONTROL

INDICATE CURRENT NODE CPU
 IS MSG AT DESTINATION ?

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ASSIGN	CP	M.ROUTE	CP ROUTE RATE/ LENGTH
RT.OVHD			
CP			
M.OVHD			
M.OVHD			
V.ROUTER			
CP			
ROUTE.ON			
CONSTANT			
M.OVHD			
DEALLOC			
CP			
CALL			
CHLID			
MSG			
END			
BRANCH			
ENTRY			
COMPARE			
MSG			
TYPE			
EQ			
HPCTRL			
MSG			
\$PSP			
MSG			
PRIORITY			
ASSIGN			
HPCTRL			
ENTRY			
CALL			
GIVEN			
ENTRY			
END			

MONITOR OVERHEAD FOR PLOT

OBTAIN CP-HANDLE INTERRUPT
DELAY FOR ROUTING
RELEASE CPU TO OTHERS
FORWARD MESSAGE WITH I/O

MESSAGE AT DESTINATION
IF RESPONSE-UP PRIORITY

SET MESSAGE PRIORITY

PRIORITY=0 IF UNDEFINED
CONTEXT SWITCH MESSAGE

1 MSG (I) 2 CP 3 RT.OVHD 4 M.OVHD
5 ROUTE.ON (A) 6 CHLID (P) 7 PRIORITY 8 CONTROL (P)

LOCAL VARIABLES OF PROCESS HANDLER

1 MSG (I) 2 CP 3 RT.OVHD 4 M.OVHD
5 ROUTE.ON (A) 6 CHLID (P) 7 PRIORITY 8 CONTROL (P)

PROCESS
MESSAGE

REQ-I/O

DESCRIPTION

GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START	ALL				
GIVEN	MSG	PROCESS	PRIORITY	RESP.OPT	
CREATE	MSG	MSG.LENGTH	TO.NODE	MSG	
ASSIGN	\$CNODE	MSG	CNODE		CREATE MESSAGE DATA TO RTE INDICATE CURRENT NODE
ASSIGN	\$CNODE	MSG	CNODE		INDICATE CURRENT NODE FROM
ASSIGN	PROCESS	MSG	FNODE		INDICATE REQUESTED PROCESS
ASSIGN	PRIORITY	MSG	TASK		INDICATE RELATIVE PRIORITY
ASSIGN	RESP.OPT	MSG	TASKPRI		\$NOWAIT OR \$ WAIT ON CALL

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```

MSG          RESPONSE
MSG LNTH    LENGTH
MSG          EQ
COMPARE TO NODE
END
COMPARE TO NODE
YES
ASSIGN TO NODE
MSG TMODE
BRANCH END 100
GETNODE ENTRY
ASSIGN MSG PROCESS
MSG TMODE
END ENTRY ESP-CALL WAIT 0
CALL MSG
GIVEN MSG
END

```

LOCAL VARIABLES OF PROCESS REQ-I/O

```

=====
1 PROCESS IX) 2 PRIORITY 3 RESP.OPT 4 MSG LNTH
5 TO NODE 6 MSG (I) 7 ESP-CALL (P)
=====

```

PROCESS

MEMORIC

ROUTER

DESCRIPTION

OPERATING SYSTEM : INTERRUPT HANDLING AND ROUTING

```

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
GIVEN MSG
ASSIGN MSG CNODE INDICATE CURRENT NODE CPU
COMPARE MSG CNODE EQ IS MSG AT DESTINATION ?
ASSIGN CP MSG TMODE CONTROL CP ROUTE RATE/ LENGTH
ASSIGN RT.OVHD MSG LENGTH CALCULATE ROUTE OVERHEAD
ASSIGN MSG MSG LNTH
ASSIGN CP M.CS
ROUTE ON CONSTANT M.OVHD
CALL CHLIO NOWAIT 0 DELAY FOR ROUTING
GIVEN MSG FORWARD MESSAGE WITH I/O
BRANCH END 100 MESSAGE AT DESTINATION
ENTRY ROUTE ON CONSTANT M.CS IF RESPONSE-UP PRIORITY
COMPARE MSG TYPE EQ

```

CONTROL

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	ASSIGN	\$RESP MSG	TASKPRI	HPCTRL	SET MESSAGE	PRIORITY
HPCTRL	ENTRY					PRIORITY=0 IF UNDEFINED
	CALL		NOWAIT	PRIORITY	CONTEXT	SWITCH MESSAGE
	GIVEN	MSG				
END	ENTRY					
	END					

```
=====
LOCAL VARIABLES OF PROCESS ROUTER
=====
1 MSG      (I)  2 CP      3 RT.OVHD  4 MSG.LNTH
5 N.OVHD   6 ROUTE.DN  (A)  7 CHLIO  (P)  8 M.CS
9 PRIORITY 10 CONTROL  (P)
=====
```

PROCESS	DESCRIPTION
MEMO-11C	
TOHOST1	

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	ALL	NO		
	CALL	REQ-I/O	WAIT	0	
	GIVEN	T01	PPI	\$NOWAIT	
		36	H1	MSG	
	END				

```

LOCAL VARIABLES OF PROCESS ICHOST1
=====
1 REQ-I/O (P) 2 TOT (P) 3 PRI 4 M1 (R)
5 MSG (I)
=====
PROCESS
=====
MUSCNETIC
=====
DESCRIPTION
=====
ICHOST2
=====

```

ENTRY	OPCODE	PARM 1	PARM	PARM	COMMENT
START	ALL	NO			
CALL	REQ-I/O	WAIT	0		
GIVEN	T02	PPI	9/MSWAIT		
	36	H2	MSG		
END					
LOCAL VARIABLES OF PROCESS T0H0ST2					
1	REQ-I/O	(P)	2 T02	(P)	3 PPI
				(P)	4 H2
					(R)

PAGE 16
5 MSG (1)
PROCESS
MEMONIC
===== DESCRIPTION =====
TOHOST3

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
CALL	REQ-1/0	WAIT	0		
GIVEN	T03	PRI	\$NOWAIT		
	36	M3	MSG		
END					

LOCAL VARIABLES OF PROCESS TOHOST3
===== (R)
1 REQ-1/0 (P) 2 T03 (P) 3 PRI 4 M3
5 MSG (1)
PROCESS
MEMONIC
===== DESCRIPTION =====
TOHOST4

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
CALL	REQ-1/0	WAIT	PRI		
GIVEN	T03	PRI	\$NOWAIT		
	36	M4	MSG		
END					

LOCAL VARIABLES OF PROCESS TOHOST4
===== (R)
1 REQ-1/0 (P) 2 PRI 3 T04 (P) 4 M4
5 MSG (1)
PROCESS
MEMONIC
===== DESCRIPTION =====
TOHOST5

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
CALL	REQ-1/0	WAIT	0		
GIVEN	T05	PRI	\$NOWAIT		
	36	M5	MSG		

PAGE 17
END

LOCAL VARIABLES OF PROCESS TOMOSTS

	1	REQ-I/O	(P)	2	TOS	(P)	3	PRI		4	H5	(R)
	5	MSG	(I)									

PROCESS

MEMORIC	DESCRIPTION
1	...
2	...
3	...
4	...
5	...
6	...
7	...
8	...
9	...
10	...
11	...
12	...
13	...
14	...
15	...
16	...
17	...
18	...
19	...
20	...
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81	...
82	...
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84	...
85	...
86	...
87	...
88	...
89	...
90	...
91	...
92	...
93	...
94	...
95	...
96	...
97	...
98	...
99	...
100	...

YCHOST6

ENTRY	OPCODE	PAPH	PARM	PARM	COMMENT
	START	ALL	NO		
	CALL	REQ-I/O	WAIT	0	
	GIVEN	TO6	PPI	\$NOWAIT	
		36	H6	MSG	
	END				

LOCAL VARIABLES OF PROCESS T0H0ST6

	(P)	2	YCS	(P)	3	PRI	(R)
1	REQ-I/O						4
5	MSG			(I)			H6

PROCESS

[illegible]

101

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	ALL	NO		
	GIVEN	MSG			
	PETUON	MSG			
	END				

LOCAL VARIABLES OF PROCESS T01

1 455 (1)

53 JUL 58
1112

PROCESSED
JUL 13 1964
FBI - NEW YORK

101

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
00	00	00	00	00	00
01	00	00	00	00	00
02	00	00	00	00	00
03	00	00	00	00	00
04	00	00	00	00	00
05	00	00	00	00	00
06	00	00	00	00	00
07	00	00	00	00	00
08	00	00	00	00	00
09	00	00	00	00	00
10	00	00	00	00	00
11	00	00	00	00	00
12	00	00	00	00	00
13	00	00	00	00	00
14	00	00	00	00	00
15	00	00	00	00	00
16	00	00	00	00	00
17	00	00	00	00	00
18	00	00	00	00	00
19	00	00	00	00	00
20	00	00	00	00	00
21	00	00	00	00	00
22	00	00	00	00	00
23	00	00	00	00	00
24	00	00	00	00	00
25	00	00	00	00	00
26	00	00	00	00	00
27	00	00	00	00	00
28	00	00	00	00	00
29	00	00	00	00	00
30	00	00	00	00	00
31	00	00	00	00	00
32	00	00	00	00	00
33	00	00	00	00	00
34	00	00	00	00	00
35	00	00	00	00	00
36	00	00	00	00	00
37	00	00	00	00	00
38	00	00	00	00	00
39	00	00	00	00	00
40	00	00	00	00	00
41	00	00	00	00	00
42	00	00	00	00	00
43	00	00	00	00	00
44	00	00	00	00	00
45	00	00	00	00	00
46	00	00	00	00	00
47	00	00	00	00	00
48	00	00	00	00	00
49	00	00	00	00	00
50	00	00	00	00	00
51	00	00	00	00	00
52	00	00	00	00	00
53	00	00	00	00	00
54	00	00	00	00	00
55	00	00	00	00	00
56	00	00	00	00	00
57	00	00	00	00	00
58	00	00	00	00	00
59	00	00	00	00	00
60	00	00	00	00	00
61	00	00	00	00	00
62	00	00	00	00	00
63	00	00	00	00	00
64	00	00	00	00	00
65	00	00	00	00	00
66	00	00	00	00	00
67	00	00	00	00	00
68	00	00	00	00	00
69	00	00	00	00	00
70	00	00	00	00	00
71	00	00	00	00	00
72	00	00	00	00	00
73					

PAGE 18

GIVEN MSG
RETURN MSG
END

LOCAL VARIABLES OF PROCESS T02

1 MSG (1)

PROCESS

PHONOMIC DESCRIPTION

T03

ENTRY OPCODE PARM PARM PARM COMMENT

START ALL NO
GIVEN MSG
RETURN MSG
END

LOCAL VARIABLES OF PROCESS T03

1 MSG (1)

PROCESS

PHONOMIC DESCRIPTION

T04

ENTRY OPCODE PARM PARM PARM COMMENT

START ALL NO
GIVEN MSG
RETURN MSG
END

LOCAL VARIABLES OF PROCESS T04

1 MSG (1)

PROCESS

PHONOMIC DESCRIPTION

T05

ENTRY OPCODE PARM PARM PARM COMMENT

START ALL NO
GIVEN MSG

PAGE 19
 RETURN MSG
 END

LOCAL VARIABLES OF PROCESS TOS

```
=====
1 MSG
(I)
PROCESS
  PHENONIC
  =====
  TOS
```

```
ENTRY  OP CODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
GIVEN  MSG
RETURN MSG
END
```

LOCAL VARIABLES OF PROCESS TOS

```
=====
1 MSG
(I)
PROCESS
  PHENONIC
  =====
  TURN ON TRACE OUTPUT
  TRACE
```

```
ENTRY  OP CODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
TRACE  ON
END
```

LOAD DEFINITION.....

```
LOAD
PHENONIC
=====
LOAD1  THIS IS THE LOAD FOR HOST 1
      LO'D  NODES
      =====
      HI
```

```
PROCESS
PHENONIC MAX B  METHOD  MEAN  DELTA  PRIORITY
=====
TOSOST 20  EXPONENT 1370  0  0
```

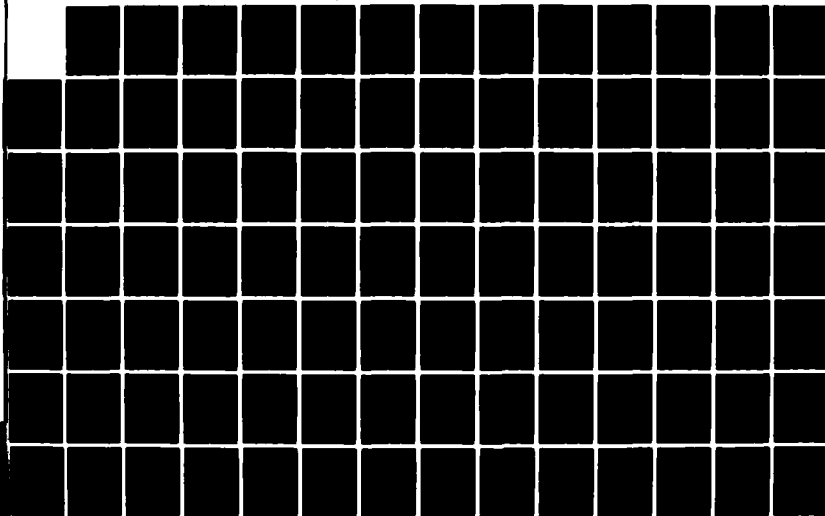
AD-A135,760

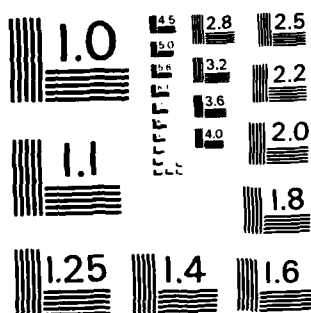
AISIM (AUTOMATED INTERACTIVE SIMULATION MODEL)
INSTALLATION AND ACCEPTANC..(U) HUGHES AIRCRAFT CO
FULLERTON CA GROUND SYSTEMS GROUP W AUSTELL ET AL.
26 FEB 82 ESD-TR-83-216 F19628-79-C-0153 F/G 9/2

2/3

UNCLASSIFIED

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

PAGE 20

TONOST3	20	EXPONENT 1370	0	0
TONOST4	20	EXPONENT 1370	0	0
TONOST5	20	EXPONENT 1370	0	0
TONOST6	20	EXPONENT 1370	0	0

LOAD
PNEUMONIC

DESCRIPTION

=====

THIS IS THE LOAD FOR HOST 2

LOAD

MODES

=====

H2

PROCESS	PNEUMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	PRIORITY
TONOST1	20	EXPONENT 1370	0	0			
TONOST3	20	EXPONENT 1370	0	0			
TONOST4	20	EXPONENT 1370	0	0			
TONOST5	20	EXPONENT 1370	0	0			
TONOST6	20	EXPONENT 1370	0	0			

LOAD

PNEUMONIC

=====

THIS IS THE LOAD FOR HOST 3

LOAD

MODES

=====

H3

PROCESS	PNEUMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	PRIORITY
TONOST1	20	EXPONENT 1370	0	0			
TONOST2	20	EXPONENT 1370	0	0			
TONOST4	20	EXPONENT 1370	0	0			
TONOST5	20	EXPONENT 1370	0	0			
TONOST6	20	EXPONENT 1370	0	0			

LOAD

PNEUMONIC

=====

THIS IS THE LOAD FOR HOST 4

LOAD

MODES

=====

H4

PROCESS	PNEUMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	PRIORITY
---------	-----------	-------	----------	--------	------	-------	----------

PAGE 21

```

=====
TOST1 20 EXPONENT 1370 0 0
TOST2 20 EXPONENT 1370 0 0
TOST3 20 EXPONENT 1370 0 0
TOST5 20 EXPONENT 1370 0 0
TOST6 20 EXPONENT 1370 0 0
=====

```

LOAD

MEMORIC

DESCRIPTION

LOADS

THIS IS THE LOAD FOR H5

LOAD

NODES

H5

```

=====
PROCESS SCHEDULE
MEMORIC MAX # METHOD MEAN DELTA PRIORITY
=====
TOST1 20 EXPONENT 1370 0 0
TOST2 20 EXPONENT 1370 0 0
TOST3 20 EXPONENT 1370 0 0
TOST4 20 EXPONENT 1370 0 0
TOST6 20 EXPONENT 1370 0 0
=====

```

LOAD

MEMORIC

DESCRIPTION

LOADS

THIS IS THE LOAD FOR HOST6

LOAD

NODES

H6

```

=====
PROCESS SCHEDULE
MEMORIC MAX # METHOD MEAN DELTA PRIORITY
=====
TOST1 20 EXPONENT 1370 0 0
TOST2 20 EXPONENT 1370 0 0
TOST3 20 EXPONENT 1370 0 0
TOST4 20 EXPONENT 1370 0 0
TOST5 20 EXPONENT 1370 0 0
=====

```

SCENARIO DEFINITION

SCENARIO

MEMORIC

DESCRIPTION

PERIOD

PERIOD

PAGE 22
 LENGTH
 =====
 15000

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
 PNEUMONIC PNEUMONIC PNEUMONIC PNEUMONIC PNEUMONIC PNEUMONIC
 =====
 PEP1

TRIGGER TIME TO SCHEDULE TRIGGER TIME TO SCHEDULE
 PNEUMONIC SCHEDULE PRIORITY PNEUMONIC SCHEDULE PRIORITY
 =====
 LOADH1 0 0 LOADH2 0 0
 LOADH3 0 0 LOADH4 0 0
 LOADH5 0 0 LOADH6 0 0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX C

MODEL DESCRIPTIONS FOR ACCEPTANCE TESTING SUPPORT

TESTDBA.DBF through TESTDBE.DBF

APPENDIX C

TEST 1 MODEL - File Verification

TESTDBA.DBF Listing

```

SIMULATION REPORT
AISIM VERSION 2.0
HUGHES AIRCRAFT COMPANY
08/03/81
GLOBAL CONSTANT DEFINITION....

```

CONSTANT	INITIAL	PHNECHONIC VALUE	COMMENT
1	1	1	
2	2	2	
3	3	3	
4	4	4	
5	5	5	
6	6	6	
7	7	7	
8	8	8	
9	9	9	
10	10	10	
11	11	11	
12	12	12	
13	13	13	
14	14	14	
15	15	15	
16	16	16	
17	17	17	
18	18	18	
19	19	19	
20	20	20	
21	21	21	
22	22	22	
23	23	23	
24	24	24	
25	25	25	
26	26	26	
27	27	27	
28	28	28	
29	29	29	
30	30	30	
31	31	31	
32	32	32	
33	33	33	
34	34	34	
35	35	35	
36	36	36	
37	37	37	
38	38	38	
39	39	39	
40	40	40	
41	41	41	
42	42	42	
43	43	43	
44	44	44	
45	45	45	
46	46	46	
47	47	47	
48	48	48	
49	49	49	
50	50	50	
51	51	51	
52	52	52	
53	53	53	
54	54	54	
55	55	55	
56	56	56	
57	57	57	
58	58	58	
59	59	59	
60	60	60	
61	61	61	
62	62	62	
63	63	63	
64	64	64	
65	65	65	
66	66	66	
67	67	67	
68	68	68	
69	69	69	
70	70	70	
71	71	71	
72	72	72	
73	73	73	
74	74	74	
75	75	75	
76	76	76	
77	77	77	
78	78	78	
79	79	79	
80	80	80	
81	81	81	
82	82	82	
83	83	83	
84	84	84	
85	85	85	
86	86	86	
87	87	87	
88	88	88	
89	89	89	
90	90	90	
91	91	91	
92	92	92	
93	93	93	
94	94	94	
95	95	95	
96	96	96	
97	97	97	
98	98	98	
99	99	99	
100	100	100	

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

VARIABLE	INITIAL	PHENOMIC VALUE	COMMENT	GLOBAL VARIABLE
V.COUNT1	10			

ITEM DEFINITION.....

ITEM	DESCRIPTION
13411	13411
13412	13412
13413	13413
13414	13414
13415	13415
13416	13416
13417	13417
13418	13418
13419	13419
13420	13420
13421	13421
13422	13422
13423	13423
13424	13424
13425	13425
13426	13426
13427	13427
13428	13428
13429	13429
13430	13430
13431	13431
13432	13432
13433	13433
13434	13434
13435	13435
13436	13436
13437	13437
13438	13438
13439	13439
13440	13440
13441	13441
13442	13442
13443	13443
13444	13444
13445	13445
13446	13446
13447	13447
13448	13448
13449	13449
13450	13450
13451	13451
13452	13452
13453	13453
13454	13454
13455	13455
13456	13456
13457	13457
13458	13458
13459	13459
13460	13460
13461	13461
13462	13462
13463	13463
13464	13464
13465	13465
13466	13466
13467	13467
13468	13468
13469	13469
13470	13470
13471	13471
13472	13472
13473	13473
13474	13474
13475	13475
13476	13476
13477	13477
13478	13478
13479	13479
13480	13480
13481	13481
13482	13482
13483	13483
13484	13484
13485	13485
13486	13486
13487	13487
13488	13488
13489	13489
13490	13490
13491	13491
13492	13492
13493	13493
13494	13494
13495	13495
13496	13496
13497	13497
13498	13498
13499	13499
13500	13500

ITEM	DESCRIPTION	
ITEM2		

[illegible][illegible]

ITEM	DESCRIPTION
1	1000
2	1000
3	1000
4	1000
5	1000
6	1000
7	1000
8	1000
9	1000
10	1000
11	1000
12	1000
13	1000
14	1000
15	1000
16	1000
17	1000
18	1000
19	1000
20	1000
21	1000
22	1000
23	1000
24	1000
25	1000
26	1000
27	1000
28	1000
29	1000
30	1000
31	1000
32	1000
33	1000
34	1000
35	1000
36	1000
37	1000
38	1000
39	1000
40	1000
41	1000
42	1000
43	1000
44	1000
45	1000
46	1000
47	1000
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84	1000
85	1000
86	1000
87	1000
88	1000
89	1000
90	1000
91	1000
92	1000
93	1000
94	1000
95	1000
96	1000
97	1000
98	1000
99	1000
100	1000

PAGE 2
ITEMS

ITEM DESCRIPTION
=====

ITEM6

ITEM DESCRIPTION
=====

4ITEM1

ITEM DESCRIPTION
=====

4ITEM2

ITEM DESCRIPTION
=====

4ITEM3

ITEM DESCRIPTION
=====

4ITEM4

QUEUE DEFINITION.....

QUEUE MAXIMUM
PNEUMATIC SIZE COMMENT
=====

RESOURCE DEFINITION.....

RESOURCE TOTAL INITIAL
PNEUMATIC # UNITS # UNITS DESCRIPTION
=====

ARCHITECTURE LEGAL PATH DEFINITION

FROM TO NEXT VIA
DEVICE DEVICE LINK
=====

ACTION DEFINITION.....

ACTION ACTION
PNEUMATIC CLASS COMMENT
=====

PAGE 3
=====

DELAY MAN

PROCESS DEFINITION.....

PROCESS DESCRIPTION
=====

INIT1 TEST CALL BLOCK

ENTRY	OF CODE	PARM	PARM	COMMENT
START	ASSIGN	1	NO	INITIALIZE COUNTER
ENTRY	CC:IFARE	L	GT	CONTINUE FOR ALL CALLS
CALL	V.COUNT1	L	WAIT	TEST VALUE OF COUNTER
GIVEN	PROCESS1	BLOCK	L	INITIATE PARALLEL INSTANT
EVAL	L	ADD	L	INCREMENT COUNTER
BRANCH	NEXT	100	2	BRANCH
ENTRY	WAIT			ENTRY
END				SYNCHRONIZE FOR ALL

LOCAL VARIABLES OF PROCESS INIT1

1 L 2 PROCESS1 (P)

PROCESS DESCRIPTION
=====

INIT2 TEST CALL BLOCK AND NOWAIT

ENTRY	OF CODE	PARM	PARM	COMMENT
START	ASSIGN	1	NO	INITIALIZE COUNTER
ENTRY	CC:IFARE	L	GT	CONTINUE FOR ALL CALLS
CALL	V.COUNT1	L	WAIT	TEST VALUE OF COUNTER
EVAL	PROCESS2	BLOCK	0	INITIATE PARALLEL INSTANT
BRANCH	NEXT	100	1	INCREMENT COUNTER
				BRANCH

```

PAGE 4
WAIT ENTRY
CALL PROCESS2 NOWAIT 0 ENTRY
WAIT SYNCHRONIZE FOR ALL
END

LOCAL VARIABLES OF PROCESS INIT2
=====
1 L 2 PROCESS2 (P)
=====
PROCESS DESCRIPTION
=====
INIT3 CREATE, SEND, ACTION DELAY FOR 6 ITEMS
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START NO
ENTRY ENTRY
CREATE ITEM1 SEND AN ITEM TO PROCESS3
SEND PROCESS3 ITEM1 ACTION
DELAY CONSTANT 1
CREATE ITEM2
SEND PROCESS3 ITEM2 ACTION
DELAY CONSTANT 1
CREATE ITEM3
SEND PROCESS3 ITEM3 ACTION
DELAY CONSTANT 1
CREATE ITEM4
SEND PROCESS3 ITEM4 ACTION
DELAY CONSTANT 1
CREATE ITEM5
SEND PROCESS3 ITEM5 ACTION
CREATE ITEM6
SEND PROCESS3 ITEM6 ACTION
DELAY CONSTANT 1
LOOP NEXT V.COUNT1 LOOP V.COUNT1 TIMES - NEXT
END

LOCAL VARIABLES OF PROCESS INIT3
=====
1 ITEM1 (I) 2 PROCESS3 (P) 3 DELAY (A) 4 ITEM2 (I)
5 ITEM3 (I) 6 ITEM4 (I) 7 ITEM5 (I) 8 ITEM6 (I)
=====
PROCESS DESCRIPTION
=====
INIT4A CREATE, SEND, LOOP 3 ITEMS
=====

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
NEXT	START		NO		ENTRY
	ENTRY	4ITEM1	4ITEM2	4ITEM3	CREATE 3 ITEMS
	PROCESS	4ITEM1		4ITEM2	
	SEND	4ITEM3			
		NEXT	V.COUNT1		LOOP V.COUNT1 TIMES - NEXT
	LOOP				
	END				

```
=====
LOCAL VARIABLES OF PROCESS INIT4A
=====
1 4ITEM1 (I) 2 4ITEM2 (I) 3 4ITEM3 (I) 4 PROCESS4 (P)
=====
```

```
PROCESS      =
MSECHNIC    =
INITI48     =
DESCRIPTION  =
CREATE,SEND, LOOP WITH DELAY
```

```

=====
ENTRY      OPCCF      PARM      PARM      PARM      COMMENT
=====
          START
NEXT      ENTRY      DELAY      CONSTANT 10      ENTRY
          CREATE      4ITEM4
          SEND      PROCESS4 4ITEM4      ACTION
          LOOP      NEXT      V.COUNT1      CREATE
          END      LOOP      V.COUNT1      LOOP V.COUNT1 TIMES - NEXT
=====

```

```
=====
LOCAL VARIABLES OF PROCESS INIT4B
=====
1 DELAY      (A)      2 4ITEM4      (I)      3 PROCESS4      (P)
=====
PROCESS
=====
ENERGIC
=====
PROCESS1
=====
GIVEN-TIME, ACTION DELAY
=====
```

ENTRY	OF CODE	PARM	PARM	PARM	COMMENT
START					
GIVEN			NO		
DELAY		TIME			
END		CONSTANT	TIME		
					ACTION

LOCAL VARIABLES OF PROCESS PROCESS1

```

PAGE 6
1 TIME
PROCESS
PHENOMNIC
=====
DESCRIPTION
=====
ACTION DELAY (CONSTANT)
PROCESS2
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START NO
DELAY CONSTANT 10
END

LOCAL VARIABLES OF PROCESS PROCESS2
=====
1 DELAY (A)
=====
PROCESS
PHENOMNIC
=====
DESCRIPTION
=====
RECEIVE AND DESTROY ITEMS -- SERIAL # NO MATCH
PROCESS3
=====

ENTRY OPCODE PARM PARM PARM PARM COMMENT
=====
START NO
RECEIVE ITEM1 ITEM2 ITEM3 ITEM6 DESTROY ALL SIX ITEMS
DESTROY ITEM1 ITEM2 ITEM3 ITEM6
END

LOCAL VARIABLES OF PROCESS PROCESS3
=====
1 ITEM1 (I) 2 ITEM2 (I) 3 ITEM3 (I) 4 ITEM4 (I)
5 ITEM5 (I) 6 ITEM6 (I)
PROCESS
PHENOMNIC
=====
DESCRIPTION
=====
RECEIVE AND DESTROY 4 ITEMS -- SERIAL # MATCH
PROCESS4
=====

ENTRY OPCODE PARM PARM PARM PARM COMMENT
=====
START NO MATCH
RECEIVE 4ITEM1 4ITEM2 4ITEM3
DESTROY 4ITEM1 4ITEM2 4ITEM3 DESTROY 4 ITEMS
4ITEM4
END

```

PAGE 7

LOCAL VARIABLES OF PROCESS PROCESS4

1 4ITEM1 (I) 2 4ITEM2 (I) 3 4ITEM3 (I) 4 4ITEM4 (I)

LOAD DEFINITION.....

LOAD MNEUMONIC DESCRIPTION
LOAD1 LOAD NODES

PROCESS SCHEDULE
MNEUMONIC MAX # METHOD MEAN DELTA PRIORITY
INIT1 1 START 0
INIT2 1 START 0

SCENARIO DEFINITION....

SCENARIO MNEUMONIC DESCRIPTION
TEST1

PERIOD
LENGTH
100

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MNEUMONIC MNEUMONIC MNEUMONIC MNEUMONIC MNEUMONIC MNEUMONIC MNEUMONIC MNEUMONIC

TRIGGER TIME TO SCHEDULE TRIGGER TIME TO SCHEDULE
MNEUMONIC SCHEDULE PRIORITY MNEUMONIC SCHEDULE PRIORITY
INIT1 0 0 INIT2 0 0
INIT3 0 0 INIT4 0 0
INIT5 0 0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX C

TEST 2 MODEL - File Verification
TESTDBB.DBF Listing

PAGE 1

```

#####
S I M U L A T I O N   R E P O R T
#####
AISIM VERSION 2.0
#####
HUGHES AIRCRAFT COMPANY
#####
00/03/81
#####
GLOBAL CONSTANT DEFINITION.....

```

```

CONSTANT INITIAL COMMENT
PNEUMONIC VALUE =====

```

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

```

VARIABLE INITIAL COMMENT
PNEUMONIC VALUE =====
V.CHNL 0 GLOBAL VARIABLE TO HOLD CHANNEL
V.CLOCK1 0 GLOBAL VARIABLE OF CLOCK FIRST SAMPLE
V.CLOCK2 0 GLOBAL VARIABLE OF CLOCK SECOND SAMPLE
V.CNCDIE A GLOBAL VARIABLE OF CURRENT NODE INITIALIZED TO RES.
V.NXTND B GLOBAL VARIABLE INITIALIZED TO RESOURCE

```

ITEM DEFINITION.....

QUEUE DEFINITION.....

```

QUEUE MAXIMUM
PNEUMONIC SIZE COMMENT
=====

```

RESOURCE DEFINITION.....

```

RESOURCE TOTAL INITIAL
PNEUMONIC # UNITS # UNITS DESCRIPTION
=====
A 1 1 1 RESOURCE FOR NODE
ATTR. INITIAL
NAME VALUE
=====
COST 0

```

```

B 1 1 1 RESOURCE FOR NODE

```

PAGE 2

ATTP.	INITIAL	
NAME	VALUE	
=====	=====	
COST	0	

RESOURCE FOR NODE

1	1	
ATTP.	INITIAL	
NAME	VALUE	
=====	=====	
COST	0	

CHNL

1	1	
ATTP.	INITIAL	
NAME	VALUE	
=====	=====	
COST	0	

RESOURCE FOR CON

1	1	
ATTP.	INITIAL	
NAME	VALUE	
=====	=====	
COST	0	

C1

1	1	
ATTP.	INITIAL	
NAME	VALUE	
=====	=====	
COST	0	

RESOURCE FOR CON

ARCHITECTURE LEGAL PATH DEFINITION

FROM	TO	NEXT	VIA
DEVICE	DEVICE	DEVICE	LINK
=====	=====	=====	=====
A	B	B	CHNL
B	A	A	CHNL
C	C	C	C1
	B	B	C1

ACTION DEFINITION.....

ACTION	CLASS	CONTENT
=====	=====	=====
ADelay	TEST	DELAY AT PPROCESS A
EDelay	TEST	DELAY IN BPROC
REPLY	TEST	TES DELAY IN PROC FOR REPLY
TRANSFER	TEST	CHANNEL TRANSFER DELAY

PROCESS DEFINITION.....

PROCESS	DESCRIPTION
=====	=====
APROC	

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	A			
	ALOC	\$CNODE			TEST \$CNODE IN ALLOC CONTX
	ADLAY	CONSTANT \$CLOCK			TEST \$CLOCK IN ACTION MEAN
	ADLAY	CONSTANT 0			
	ASSIGN	\$CNODE			TEST ASSIGNMENT OF \$CNODE
	ASSIGN	L.CNODE			TEST ASSIGNMENT \$CNODE
	ASSIGN	\$CNODE			TEST PROCESS TO LOCAL
	ASSIGN	BPROC			TEST \$CNODE EVALUATION
	ASSIGN	NEXT			TEST \$CNODE GLOBAL TO LOCAL
	ASSIGN	\$CNODE	NEXT		TEST \$CNODE
	ASSIGN	\$CNODE	BPROC		TEST ASSIGNMENT & COMPARE
	ASSIGN	\$CNODE	EPROC		SHOULD NOT EXECUTE
	COMPARE	LB1		EQ	TEST \$NEXTNODE
	COMPARE	LB2		N1	
	BRANCH	N1	100		
N1	ENTRY				
	ASSIGN	\$NEXTNODE LB1			TEST \$NEXTNODE
	ASSIGN	\$NEXTNODE LB2			
	ASSIGN	V.NEXT			
	COMPARE	LB3		EQ	TEST \$NEXTNODE TO LOCAL
	COMPARE	V.NEXT		N2	
	BRANCH	N2	100		
N2	ENTRY				
	ASSIGN	\$CHANNEL B			TEST \$CHANNEL TO LOCAL RES.
	ASSIGN	L1.CHNL			TEST \$CHANNEL TO LOCAL
	ASSIGN	\$CHANNEL LB3			TEST \$CHANNEL GLOBAL
	ASSIGN	\$CHANNEL V.NEXT			TEST COMPARE CONTX \$CNODE
	COMPARE	\$CNODE		EQ	
	COMPARE	\$CNODE	A1		
	BRANCH	A1	100		
A1	ENTRY				
	COMPARE	L.CNODE		EQ	TEST CONTEXT \$CNODE TO LOC
	COMPARE	\$CNODE		A2	
	BRANCH	A2	100		
A2	ENTRY				
	COMPARE	\$CNODE		EQ	TEST CONTEXT \$CNODE-GLOBAL
	COMPARE	V.CNODE		A3	
	BRANCH	A3	100		

PAGE 4

A3	ENTRY COMPADE	L.NXTND V.NXTND	EQ A4	TEST %NXTNODE GLOBAL-LOCAL
	BRANCH	A4 100		
A4	ENTRY COMPADE	L1.CHNL L2.CHNL	EQ A5	TEST %CHANNEL COMPADE
	BRANCH	A5 100		
A5	ENTRY COMPADE	V.CHNL L1.CHNL	EQ A6	TEST ASSIGN %CHANNEL
	BRANCH	A6 100		
A6	ENTRY TEST	L2.CHNL A7		AVAILABILITY OF %CHNL
	BRANCH	A7 100		
A7	ENTRY ALLOC	L2.CHNL A8		SWITCH BUSY FLAG ON CHNL
	TEST	L2.CHNL A8		TEST SHOULD BE FAILED
	BRANCH	A8 100		
A8	ENTRY DEALLOC	%CLOCK		RELEASE CURRENT NODE
	TRANSFER	CONSTANT %CLOCK		TRANSFER DATA OVER CHANNEL
	DEALLOC	L2.CHNL		RELEASE CURRENT CHANNEL
	CALL	BPROC	0	TEST PARAMETER BINDING
	SUSPEND	%CLOCK %CLOCK	%TASK	TEST BINDING OF %TASK
	END			

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LOCAL VARIABLES OF PROCESS APROC

1	ADelay	(A)	2	L.CNODE	3	BPROC	(P)	4	NEXT
5	LB1		6	LB2	7	EPROC		8	LB3
9	V.NEXT	10	B		(R)	11	L1.CHNL	12	L2.CHNL
13	L.NXTND		14	TRANSFER	(A)				

PROCESS

PNEMONIC

DESCRIPTION

BPROC

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	B				
GIVEN	LCLOCK	LNODE		LTASK	LET CURRENT NODE REGISTER
ASSIGN	INODE	BPROC			MAKE B BUSY
ALLOC	%CLOCK	%CLOCK			TEST AVAILABILITY OF B
DELA	CONSTANT	%CLOCK	B1		
TEST	%CLOCK	B1			

PAGE 5

B1 BRANCH B1 100
ENTRY
DEALLOC
EVAL \$CNODE
L1 ADD
L2 \$CLOCK
EVAL L2 SUBTRACT
L2 \$CLOCK 0
COMPARE L1 EQ
L2 B2
B2 BRANCH B2 100
ENTRY
EVAL V.CLOCK1 ADD
L1 \$CLOCK
L2 V.CLOCK2 SUBTRACT
EVAL L2 \$CLOCK
L2 V.CLOCK2 ABSOLUTE
COMPARE V.CLOCK1 EQ
L1 V.CLOCK2 B3
B3 BRANCH B3 100
ENTRY
ALLOCC LNODE
REFLY CONSTANT 10
TEST LNODE B4
BRANCH B4 100
ENTRY
DEALLOC LNODE
RESUME LTASK
END
B4
B3
B2
B1

TEST EVAL CONTEXT \$CLOCK

TEST RESULTS OF EVAL

EVAL GLOBAL VARIABLE TEST

EVAL ABSOLUTE \$CLOCK

TEST ARITHMETIC CONTEXT

ALLOCATE PASSED PARAMETER

TEST AVAILABILITY OF RES.

FREE UP CHANNEL

RESTART PARENT PROCESS

LOCAL VARIABLES OF PROCESS BPROC

1 LCLOCK (A) 6 L1 3 LTASK 4 BPROC (P)
5 BDELAY (A) 7 L2 6 REPLY (A)

PROCESS

PHENONIC DESCRIPTION

TRACE TURN ON THE TRACE CAPABILITY

ENTRY OPCODE PARAM PARM COMMENT

START ALL NO
TRACE ON
END
ENABLE TRACE OF KEYWORD

LOAD DEFINITION.....

APPENDIX C

TEST 3 MODEL - File Verification
TESTDBC.DBF Listing

CONSTANT	INITIAL	COMMENT
MEMORIC	VALUE	

TAELE DEFINITION...

REAL VARIABLE DEFINITION....

VARIABLE	INITIAL	COMMENT
PERMNOIC	VALUE	
GAMMA1	300	AVERAGE LENGTH OF MESSAGES
GAMMA2	.001	TRANSMISSION & RECEIVING TIMES IN SECONDS PER BYTE

ITEM DEFINITION.....

ITEM	DESCRIPTION	
MSG	TRANSIENT MESSAGE ITEM SENT FROM PRODUCE TO CONSUME	

CURE DEFINITION...

QUEUE	MAXIMUM	COMMENT
MESSAGE	SIZE	
BUFFER	INFINITE	INFINITE BUFFER FOR MESSAGES AWAITING PROCESSING

RESOURCE DEFINITION.....

RESOURCE TOTAL	INITIAL	DESCRIPTION
# UNITS	# UNITS	
PHARMACIC		

PAGE 2

SEMA 1 1 SEMA INDICATES IF TRANSMIT BUSY OR NOT

ATTR. INITIAL

NAME VALUE

=====

COST 0

STATION1 1 LOCATION OF TRANSMITTING PROCESS

ATTR. INITIAL

NAME VALUE

=====

COST 0

STATION2 1 LOCATION OF RECEIVING PROCESS

ATTR. INITIAL

NAME VALUE

=====

COST 0

ARCHITECTURE LEGAL PATH DEFINITION

FROM TO NEXT VIA

DEVICE DEVICE DEVICE LINK

=====

ACTION DEFINITION.....

ACTION ACTION

PHENOMONIC CLASS COMMENT

=====

READ-MSG MACHINE DELAY AT RECEIVE TO PROCESS MESSAGE

SENDING MACHINE DELAY AT TRANSMIT TO DELIVER MESSAGE TO BUFFER

PROCESS DEFINITION.....

PROCESS

PHENOMONIC DESCRIPTION

=====

RECEIVE RECEIVE MESSAGES FROM TRANSMIT

ENTRY OFCODE PARM PARM PARM COMMENT

=====

START STATIC:2 NO

TEST SEMA ABORT

REMOVE FIRST MSG

COMPARE MSG

0

ASSIGN MSG LENGTH

ALPHA

TEST FOR BUFFER USE

REMOVE BY FIFO DISCIPLINE

EQ

WHEN MSG=0 BUFFER IS EMPTY

ABORT

MESSAGE LENGTH IS READ

PAGE 3

EVAL	MU	MULTIPLY	CALCULATE RECEPTION TIME
ALPHA	GAMMA2		
READ-MSG UNIFORM	MU		TIME TO PROCESS MESSAGE
DESTROY MSG			MSG ELIMINATED FROM SYSTEM
ENTRY			ENTER FROM COMPARE & TEST
END			

ABORT

LOCAL VARIABLES OF PROCESS RECEIVE

1 SEMA	(P)	2 MSG	(I)	3 BUFFER	(Q)	4 ALPHA
5 MU		6 READ-MSG	(A)	7		

PROCESS

MEMORIC

TRANSMIT

TRANSMITTING MESSAGES TO RECEIVER

ENTRY	DECODE	PAPH	PAPH	COMMENT
START	STATION	NO		
ALLO	SEMA			RESOURCE FOR SENDING MSG
CREATE	MSG			INTRODUCE MSG INTO SYSTEM
EVAL	ALPHA	RANDOM		GENERATE RANDOM NUMBER
EVAL	ALPHA	MULTIPLY		Twice average times alpha
ALPHA	ALPHA	GAMMA1		
ASSIGN	ALPHA	LENGTH		SET MESSAGE LENGTH
EVAL	MU	MULTIPLY		CALCULATE TRANSMIT TIME
SENDING UNIFORM	MU	GAMMA2		TIME CONSUMED TRANSMITTING
ASSIGN	ALPHA	LENGTH		SET MESSAGE LENGTH
FILE	MSG	LAST		STORE MSG ON BUFFER
DEALLO	SEMA			RELEASE RESOURCE SEMA
END				

LOCAL VARIABLES OF PROCESS TRANSMIT

1 SEMA	(P)	2 MSG	(I)	3 ALPHA	4 MU
5 SENDING	(A)	6		7 BUFFER	(Q)

LOAD DEFINITION.....

LOAD

MEMORIC

TRANSMIT RATE=100, EXPONENT, PRIORITY=0

LOD

LOD

NODES

PAGE 4
 STATION1

PROCESS SCHEDULE
 MEMPHIC MAX # METHOD MEAN DELTA PRIORITY
 TRANSMIT 100 EXPONENT 1 1 0
 LOAD
 MEMPHIC DESCRIPTION
 RECEIVE RATE = 1000, INTERVAL, PRIORITY=0, MEAN=1
 L011
 LOAD
 MEMPHIC
 STATION2

PROCESS SCHEDULE
 MEMPHIC MAX # METHOD MEAN DELTA PRIORITY
 RECEIVE 1000 INTERVAL 0
 LOAD
 MEMPHIC DESCRIPTION
 TRANSMIT RATE=100, EXPONENT, PRIORITY=0, MEAN=2
 L02
 LOAD
 MEMPHIC
 STATION1

PROCESS SCHEDULE
 MEMPHIC MAX # METHOD MEAN DELTA PRIORITY
 TRANSMIT 50 EXPONENT 2 0
 LOAD
 MEMPHIC DESCRIPTION
 RECEIVE RATE=1000, INTERVAL, PRIORITY=1, MEAN=.5
 L022
 LOAD
 MEMPHIC
 STATION2

PROCESS SCHEDULE
 MEMPHIC MAX # METHOD MEAN DELTA PRIORITY
 RECEIVE 1000 INTERVAL .5 1
 LOAD
 MEMPHIC DESCRIPTION

PAGE 3
 =====
 TRANSMIT RATE=150, EXPONENT, PRIORITY=0, MEAN=.5
 LOAD CODES
 =====
 STATION

PROCESS SCHEDULE
 MEANIC MAX # METHOD MEAN DELTA PRIORITY
 =====
 TRANSMIT 150 EXPONENT .5 0

LOAD DESCRIPTION
 MEANIC =====
 L033 RECEIVE RATE=1000, INTERVAL, PRIORITY=0, MEAN=2
 LOAD CODES
 =====
 STATION

PROCESS SCHEDULE
 MEANIC MAX # METHOD MEAN DELTA PRIORITY
 =====
 RECEIVE 1000 INTERVAL 2 0

SCENARIO DEFINITION....

SCENARIO DESCRIPTION
 MEANIC =====
 SCENARIO WITH LOAD1 (=L01), LOAD2 (=L02), LOAD3 (=L03)
 SCIP1

PERIOD
 LENGTH
 =====
 100

PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD
MEANIC	MEANIC	MEANIC	MEANIC	MEANIC	MEANIC	MEANIC	MEANIC
0	100	200	300	400	500	600	
PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD
MEANIC	MEANIC	MEANIC	MEANIC	MEANIC	MEANIC	MEANIC	MEANIC
700	800	900	1000	1100	1200	1300	

TRIGGER TIME TO SCHEDULE TRIGGER TIME TO SCHEDULE
 MEANIC SCHEDULE PRIORITY MEANIC SCHEDULE PRIORITY
 =====

PAGE	6				
LD1	0	1	LD11	0	0
LD2	100	1	LD22	100	0
LD3	200	1	LD33	200	0
LD1	300	1	LD11	300	0
LD22	400	0			

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPDNDIX C

TEST 4 MODEL - File Verification

TESTDBD.DBF Listing

PAGE 1

\$ SIMULATION REPORT \$
\$ AISIM VERSION 2.0 \$
\$ HUGHES AIRCRAFT COMPANY \$
\$ 08/03/81 \$

\$ GLOBAL CONSTANT DEFINITION..... \$
\$ \$

CONSTANT INITIAL
Mnemonic VALUE COMMENT
=====

V TRACE 0 DEFAULT IS NO TRACE ON

TABLE DEFINITION.....

GLOBAL VARIABLE DEFINITION.....

VARIABLE INITIAL
Mnemonic VALUE COMMENT
=====

ASGRATE 60000 INTERVAL RATE BETWEEN SIGNALS
ASRRATE 30000 INTERVAL RATE BETWEEN SIGNALS
CHGRATE 40000 SWITCH-SWITCH CHANNEL SPEED IN MS/BYTE
MCGRATE 72000 INTERVAL BETWEEN SIGNALS
TIME1 30 AVERAGE SEEK TIME FOR DISK IN MILLISECONDS
VPATE 1.6276 SWITCH-OTHER NODE CHANNEL SPEED IN MS/BYTE

ITEM DEFINITION.....

ITEM DESCRIPTION
=====

MSG MESSAGE FOR INTERNODE COMMUNICATION FROM INPUT

ATTR. INITIAL
NAME VALUE
=====

CODE \$CODE
FMODE \$FMODE
LENGTH 9999999
FLASH \$PPCR
RESPONSE \$WAIT
RTASK \$PPCR
TASL PPI 9999999
THODE \$CODE
TYPE \$REQ

PAGE 2

QUEUE DEFINITION.....

QUEUE MAXIMUM
PHENONIC SIZE COMMENT
=====

RESOURCE DEFINITION... ..

1 RESOURCE TOTAL INITIAL
PHENONIC # UNITS # UNITS DESCRIPTION
=====

AB1 1 1
ATTR. INITIAL
NAME VALUE
=====

COST 0
NETINSTR 60
OSOVLD 0
SPEED 5000

AB2 1 1
ATTR. INITIAL
NAME VALUE
=====

COST 0
NETINSTR 80
OSOVLD 0
SPEED 5000

CHQ 1 1
ATTR. INITIAL
NAME VALUE
=====

COST 0
NETINSTR 80
OSOVLD 0
SPEED 5000

CH1.A 1 1
ATTR. INITIAL
NAME VALUE
=====

COST 0
RATE VRATE

CH1.B 1 1
ATTR. INITIAL
NAME VALUE
=====

PAGE 3

=====

COST	0
RATE	VRATE

RESOURCE FOR CHANNEL CONNECTOR

CH2.A 1 1
ATTR. INITIAL
NAME VALUE
=====

COST	0
RATE	VRATE

RESOURCE FOR CHANNEL CONNECTOR

CH2.B 1 1
ATTR. INITIAL
NAME VALUE
=====

COST	0
RATE	VRATE

RESOURCE FOR CHANNEL CONNECTOR

CH3.A 1 1
ATTR. INITIAL
NAME VALUE
=====

COST	0
RATE	0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH3.B 1 1
ATTR. INITIAL
NAME VALUE
=====

COST	0
RATE	0.4060

RESOURCE FOR CHANNEL CONNECTOR

CH5.A 1 1
ATTR. INITIAL
NAME VALUE
=====

COST	0
RATE	0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH5.B 1 1
ATTR. INITIAL
NAME VALUE
=====

COST	0
RATE	0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH6.A 1 1
ATTR. INITIAL
NAME VALUE

PAGE	4	=====	
		COST	0
		RATE	VRATE
CH6.B	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR
CH7.A	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR
CH7.B	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR
CH8.A	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR
CH8.B	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR
CH9.A	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR
CH9.B	1	ATTR.	INITIAL
		NAME	VALUE
		=====	=====
		COST	0
		RATE	VRATE
			RESOURCE FOR CHANNEL CONNECTOR

PAGE 5

=====

COST 0

RATE VRATE

DISK FOR COMMAND HEAD-QUARTERS

=====

COST 0

LAT DELTA 15

LATENCY 15

OSOVHD 0

SEEK TIME1

SPEED 2000

HEAD-QUARTERS

=====

COST 0

NETINSTR 80

OSOVHD 0

SPEED 1000

RESOURCE FOR NODE

=====

COST 0

NETINSTR 80

OSOVHD 0

SPEED 1000

SWITCH BETWEEN AIRBASES AND OTHER TWO SWITCHES (182)

=====

COST 0

NETINSTR 80

SPEED 1000

SWITCH BETWEEN SWITCH 1 & 3 AND HQ

=====

COST 0

NETINSTR 80

SPEED 1000

PACE 6
 SW3 1
 SWITCH BETWEEN SWITCH 1 & 2 AND CHQ
 ATTR. INITIAL
 NAME VALUE
 =====
 COST 0
 NETINSTR 20
 SPEED 1000

ARCHITECTURE LEGAL PATH DEFINITION

FROM DEVICE	TO DEVICE	NEXT DEVICE	VIA LINK
AB1	AB1	SW1	CH1.A
AB1	AS2	SW1	CH1.A
AB1	CHQ	SW1	CH1.A
AB1	DK1	SW1	CH1.A
AB1	W3	SW1	CH1.A
AB1	L3	SW1	CH1.A
AB1	SW1	SW1	CH1.A
AB1	SW2	SW1	CH1.A
AB1	SW3	SW1	CH1.A
AB1	AE1	SW1	CH2.A
AB1	AE2	SW1	CH2.A
AB1	AE3	SW1	CH2.A
AB1	AE4	SW1	CH2.A
AB1	AE5	SW1	CH2.A
AB1	AE6	SW1	CH2.A
AB1	AE7	SW1	CH2.A
AB1	AE8	SW1	CH2.A
AB1	AE9	SW1	CH2.A
AB1	AE10	SW1	CH2.A
AB1	AE11	SW1	CH2.A
AB1	AE12	SW1	CH2.A
AB1	AE13	SW1	CH2.A
AB1	AE14	SW1	CH2.A
AB1	AE15	SW1	CH2.A
AB1	AE16	SW1	CH2.A
AB1	AE17	SW1	CH2.A
AB1	AE18	SW1	CH2.A
AB1	AE19	SW1	CH2.A
AB1	AE20	SW1	CH2.A
AB1	AE21	SW1	CH2.A
AB1	AE22	SW1	CH2.A
AB1	AE23	SW1	CH2.A
AB1	AE24	SW1	CH2.A
AB1	AE25	SW1	CH2.A
AB1	AE26	SW1	CH2.A
AB1	AE27	SW1	CH2.A
AB1	AE28	SW1	CH2.A
AB1	AE29	SW1	CH2.A
AB1	AE30	SW1	CH2.A
AB1	AE31	SW1	CH2.A
AB1	AE32	SW1	CH2.A
AB1	AE33	SW1	CH2.A
AB1	AE34	SW1	CH2.A
AB1	AE35	SW1	CH2.A
AB1	AE36	SW1	CH2.A
AB1	AE37	SW1	CH2.A
AB1	AE38	SW1	CH2.A
AB1	AE39	SW1	CH2.A
AB1	AE40	SW1	CH2.A
AB1	AE41	SW1	CH2.A
AB1	AE42	SW1	CH2.A
AB1	AE43	SW1	CH2.A
AB1	AE44	SW1	CH2.A
AB1	AE45	SW1	CH2.A
AB1	AE46	SW1	CH2.A
AB1	AE47	SW1	CH2.A
AB1	AE48	SW1	CH2.A
AB1	AE49	SW1	CH2.A
AB1	AE50	SW1	CH2.A
AB1	AE51	SW1	CH2.A
AB1	AE52	SW1	CH2.A
AB1	AE53	SW1	CH2.A
AB1	AE54	SW1	CH2.A
AB1	AE55	SW1	CH2.A
AB1	AE56	SW1	CH2.A
AB1	AE57	SW1	CH2.A
AB1	AE58	SW1	CH2.A
AB1	AE59	SW1	CH2.A
AB1	AE60	SW1	CH2.A
AB1	AE61	SW1	CH2.A
AB1	AE62	SW1	CH2.A
AB1	AE63	SW1	CH2.A
AB1	AE64	SW1	CH2.A
AB1	AE65	SW1	CH2.A
AB1	AE66	SW1	CH2.A
AB1	AE67	SW1	CH2.A
AB1	AE68	SW1	CH2.A
AB1	AE69	SW1	CH2.A
AB1	AE70	SW1	CH2.A
AB1	AE71	SW1	CH2.A
AB1	AE72	SW1	CH2.A
AB1	AE73	SW1	CH2.A
AB1	AE74	SW1	CH2.A
AB1	AE75	SW1	CH2.A
AB1	AE76	SW1	CH2.A
AB1	AE77	SW1	CH2.A
AB1	AE78	SW1	CH2.A
AB1	AE79	SW1	CH2.A
AB1	AE80	SW1	CH2.A
AB1	AE81	SW1	CH2.A
AB1	AE82	SW1	CH2.A
AB1	AE83	SW1	CH2.A
AB1	AE84	SW1	CH2.A
AB1	AE85	SW1	CH2.A
AB1	AE86	SW1	CH2.A
AB1	AE87	SW1	CH2.A
AB1	AE88	SW1	CH2.A
AB1	AE89	SW1	CH2.A
AB1	AE90	SW1	CH2.A
AB1	AE91	SW1	CH2.A
AB1	AE92	SW1	CH2.A
AB1	AE93	SW1	CH2.A
AB1	AE94	SW1	CH2.A
AB1	AE95	SW1	CH2.A
AB1	AE96	SW1	CH2.A
AB1	AE97	SW1	CH2.A
AB1	AE98	SW1	CH2.A
AB1	AE99	SW1	CH2.A
AB1	AE100	SW1	CH2.A

PAGE	7	DK1	SM2	CH7.A
HQ		L3	L3	CH6.A
HQ		SH1	SM2	CH7.A
HQ		SH2	SM2	CH7.A
HQ		SH3	SM2	CH7.A
L3		AB1	HQ	CH6.B
L3		AD2	HQ	CH6.B
L3		CHQ	HQ	CH6.B
L3		DK1	HQ	CH6.B
L3		HQ	HQ	CH6.B
L3		SH1	HQ	CH6.B
L3		SH2	HQ	CH6.B
L3		SH3	HQ	CH6.B
SH1		AB1	AB1	CH1.B
SH1		AB2	AB2	CH2.B
SH1		CHQ	SM2	CH3.A
SH1		DK1	SM2	CH3.A
SH1		HQ	SM2	CH3.A
SH1		L3	SM2	CH3.A
SH1		SP2	SM2	CH3.A
SH1		SH3	SM2	CH3.A
SH2		AE1	SH1	CH3.B
SH2		AB2	SH1	CH3.B
SH2		CHQ	SH3	CH5.A
SH2		DK1	SH3	CH5.A
SH2		HQ	HQ	CH7.B
SH2		L3	HQ	CH7.B
SH2		SH1	SH1	CH3.B
SH2		SH2	SH3	CH5.A
SH3		AB1	SH2	CH5.B
SH3		AB2	SH2	CH5.B
SH3		CHQ	CHQ	CH8.B
SH3		DK1	CHQ	CH8.B
SH3		HQ	SH2	CH5.B
SH3		L3	SM2	CH5.B
SH3		SH1	SM2	CH5.B
SH3		SH2	SM2	CH5.B

ACTION DEFINITION.....

ACTION	ACTION	PHONOMIC CLASS	COMMENT
CHQGO.OH	MACHINE	CHQ	PROCESSING OF GRAPHICS REQUEST
CHQGO.OH	MACHINE	CHQ	PROCESSING OF HARD COPY REQUEST
CS.OH	CFU	PROCESSING	TO PERFORM CONTEXT SWITCHING
DURMFACT	MACHINE	ACTION	TO ENABLE CYCLIC PROGRAM CYCLES
FCPMAT	MACHINE	TIME	USED TO FORMAT PLANS FROM CHQ
HQ.OH	MACHINE	HQ	PROCESSING OF MESSAGE

PAGE 6
 LATENCY MACHINE LATENCY PAUSE SUBSEQUENT TO SEEK
 OVERHEAD MACHINE TIME FOR GENERAL USE
 ROUTE OH CPU PROCESSING DELAY TO ROUTE A MESSAGE
 SEEK MACHINE SEEKING INFORMATION ON DISK
 UPDATE APTASE UPDATING INFO SINCE PREVIOUS BROADCAST TO OTHER NODES
 XFER MACHINE TRANSFER INFORMATION SOUGHT ON DISK
 XFER OH CHANNEL PROCESSING DELAY TO ROUTE A MESSAGE OVER A CHANNEL

PROCESS DEFINITION.....

PROCESS
 MNEMONIC
 =====
 AB-DATA
 =====
 DESCRIPTION
 =====
 AIR BASE STATUS BROADCAST TO ALL OTHER NODES
 =====

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START					NO
GIVEN	MSG				
RETURN	MSG				
CALL	REQ-I/O	NO WAIT	10		PROCESS REQUEST TO CHQ
GIVEN	CHQ-DATA	10	\$NOWAIT		
	750	CHQ	155		
CALL	REQ-I/O	NO WAIT	10		PROCESS REQUEST TO HQ
GIVEN	HQ-DATA	10	\$NOWAIT		
	750	HQ	MSG		
ASSIGN	\$CODE				CURRENT NODE
COMPARE	CHCODE				TEST FOR CURRENT NODE
	AB1				
CALL	REQ-I/O	NO WAIT	10		PROCESS REQUEST TO AB1
GIVEN	ABUPDATE	10	\$NOWAIT		
	750	AB1	MSG		
BRANCH	END	100			BRANCH TO THE END
ENTRY					ENTRY FROM COMPARE NODE
CALL	REQ-I/O	NO WAIT	10		PROCESS REQUEST TO AB2
GIVEN	ABUPDATE	10	\$NOWAIT		
	750	AB2	MSG		
END	ENTRY				ENTRY FROM REQUEST TO AB1
	END				

LOCAL VARIABLES OF PROCESS AB-DATA

LOCAL VARIABLE	VALUE	DESCRIPTION
1 MSG	(I)	2 REQ-I/O (P)
5 HQ-DATA	(P)	3 CHQ-DATA (P)
9 ABUPDATE	(P)	4 CHQ (R)
		6 AB1 (R)
		7 CHODE (R)
		8 AB1 (R)

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 =====
 AIRBASE REQUEST FOR PLANS REPORT FROM CHQ
 =====

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START				NO	
GIVEN	MSG				
RETURN	MSG				
CALL	REQ-I/O	WAIT	5		PROCESS REQUEST TO CHQ
GIVEN	PLANS	5			
		CHQ			
		200			
					MSG
END					

LOCAL VARIABLES OF PROCESS AB-REQ
 =====
 1 MSG (I) 2 REQ-I/O (P) 3 PLANS (P) 4 CHQ (R)
 =====

PROCESS
 PH-EMONIC
 =====
 ABUPDATE
 =====
 DESCRIPTION
 =====
 UPDATE DATA FROM AIRBASE
 =====

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START				NO	
GIVEN	MSG				
RETURN	MSG				
UPDATE	CONSTANT	0.1			TIME CONSUMED IN UPDATING
END					

LOCAL VARIABLES OF PROCESS ABUPDATE
 =====
 1 MSG (I) 2 UPDATE (A)
 =====
 PROCESS
 PH-EMONIC
 =====
 CHLO
 =====
 DESCRIPTION
 =====
 FULL AND HALF DUPLEX CHANNEL LOGIC
 =====

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START				NO	
GIVEN	MSG				
ASSIGN	MSG	CHQ			SET INTERNAL NODE CURRENT
		SCNODE			
ASSIGN	MSG	THCODE			GET DESTINATION NODE (MSG)
		TO NODE			

```

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  ASSIGN $NXTNODE TO NODE      SET NEXT NODE TO DEST N
  ASSIGN $CHANEL TO NODE      GET CHANEL TO NEXT NODE
  ALLOC CHANEL                OBTAIN CHANNEL FOR X FER
  ASSIGN CHANEL RATE          WHAT IS RATE IN SEC/BYTE?
  ASSIGN MSG LENGTH           MESSAGE LENGTH IN BYTES
  EVAL VLENGTH                CALCULATE TRANSFER TIME
  XFER OH CONSTANT VM.OVHD    DELAY DUE TO TRANSFER TIME
  ASSIGN NXT.NODE CHODE       MESSAGE RESIDES IN NEXT
  ASSIGN MSG CHODE            SET INTERNAL NODE REGISTER
  DEALLOC CHANEL              FREE UP CHANEL AFTER XFER
  CALL HANDLER NOWAIT 0       INDICATE INTERRUPT IN NEXT
  GIVEN MSG
  END

LOCAL VARIABLES OF PROCESS CHQLO
=====
1 MSG (I) 2 TO NODE 3 NXT.NODE 4 CHANEL
5 VSPEED 6 VLENGTH 7 VM.OVHD 8 XFER.OH (A)
9 HANDLER (F)

PROCESS
PHENOMONIC
=====
CHQ-DATA
=====
ENTRY OPCODE PARM PARM PARM CORIENT
=====
START NO
GIVEN MSG
RETURN MSG
ASSIGN MSG LENGTH
VLENGTH
V.TIME MULTIPLY
.015 V.LENGTH
UPDATE CONSTANT V.TIME
END

LOCAL VARIABLES OF PROCESS CHQ-DATA
=====
1 MSG (I) 2 V.LENGTH 3 V.TIME 4 UPDATE (A)

PROCESS
=====

```

DESCRIPTION
OPERATING SYSTEM : CONTEXT SWITCHING

ENTRY	OPCODE	PAPH	PARM	PAPH	COMMENT
START	ALL	NO			
GIVEN	MSG				
ASSIGN	MSG	CHODE			CURRENT NODE IS CPU
ALLOC	CP				
ASSIGN	CP	OSOVHD			SIGNAL CURRENT CPU BUSY
					MEAN CONTEXT SWITCH TIME
CS.OH	CONSTANT	M.OVHD			DELAY CONTEXT SWITCH TIME
COMPARE	MSG	TYPE	EQ		IF RESPONSE- RESUME PARENT
	SREQ		REQUEST		
ASSIGN	MSG	PTASK			TASK TO RESUME IS IN MSG
	TASK				
PERMIE	TASK				QUEUE UP TASK FOR NODE
BRANCH	DESTROY	100			END MESSAGE LIFE
ENTRY					ELSE-> CALL REQUESTED PROC
REQUEST	ASSIGN	MSG	RTASK		EXECUTE THE CALLED PROCESS
	PROCESS				
CALL	PROCESS	WAIT	0		WAIT UNTIL COMPLETE
GIVEN	MSG				
RETURN	MSG				
COMPARE	MSG	RESPONSE	EQ		IF WAIT -> SEND MSG BACK
	NOWAIT		DESTROY		CHANGE MSG RESPONSE TYPE
ASSIGN	\$RESP				
	MSG	TYPE			
ASSIGN	MSG	FNODE			SWITCH FROM AND TO NODES
	MSG	TNODE			
ASSIGN	MSG	CHODE			CURRENT NODE IS FROM NODE
	MSG	FNODE			
CALL	CHLIO	WAIT	0		RETURN MESSAGE TO ORIGIN
GIVEN	MSG				
BRANCH	END	100			
ENTRY					TERMINATE MESSAGE AT DEST.
DESTROY	MSG				NO RESPONSE-TERMINATE MSG
END	ENTRY				
	DEALLOC	CP			INDICATE CP SWITCH DONE
	END				

LOCAL VARIABLES OF PROCESS CONTROL

1 MSG	(I)	2 CP	6 PROCESS	(X)	7 CHLIO	(P)	4 CS.OH	(A)
5 TASK								

PROCESS

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MEMORIC
=====

DESCRIPTION

DISK.OP
=====

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START				NO	
GIVEN	ASSIGN	LENGTH	DISK	SPEED	MAKE DISK SPEED = V.SPEED
EVAL		V.SPEED			TRANSFER TIME CALCULATED
ALLOC		LENGTH	V.SPEED		
ASSIGN		DISK	SEEK		DISK ALLOCATED
SEEK		SEEKTIME			MAKE SEEKTIME = SEEK
ASSIGN		UNIFORM	SEEKTIME	SEEKTIME	TIME FOR SEEK IS CONSUMED
LATENCY		DISK	LATENCY		MAKE DISK LATENCY=LATENCY
XFER		UNIFORM	LATENCY		TIME CONSUMED FOR LATENCY
DEALLOC		DISK	XFER		TRANSFER TIME CONSUMED
END					DISK RESOURCE DEALLOCATED

LOCAL VARIABLES OF PROCESS DISK.OP

	1 LENGTH	2 DISK	3 V.SPEED	4 XFER TIME
5 SEEKTIME	(A)	6 SEEK	(A)	7 LATENCY
9 XFER	(A)			8 LATENCY (A)

PROCESS
MEMORIC
=====

DESCRIPTION

ESR-CALL
=====

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START				NO	
GIVEN	ASSIGN	ALL			\$TASK= INSTANCE TO RESUME
MSG		\$TASK			
ASSIGN		MSG	PTASK		OPTION= \$WAIT OF \$HOWAIT
ASSIGN		MSG	RESPONSE		
CALL		ROUTER	WAIT	0	INITIATE ROUTING TO DEST.
GIVEN		MSG			
COMPARE		RESP.OPT		EQ	SHOULD PARENT SUSPEND ?
SUSPEND		\$HOWAIT		END	PROCESS CALLED WAIT
ENTRY					CONTINUE OR RESUME POINT
END					

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LOCAL VARIABLES OF PROCESS ESR-CALL
=====

1 MSG (I) 2 RESP.OPT 3 ROUTER (P)

PROCESS
=====

DESCRIPTION

HQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES

HQ-DATA

ENTRY OPCODE PARM PARM PARM COMMENT
=====

START NO
GIVEN MSG
RETURN MSG
ASSIGN MSG
V. LENGTH
V. LENGTH
V. TIME
MULTIPLY
EVAL .015 V. LENGTH
UPDATE CONSTANT V. TIME
PROCESSING TIME CONSUMED
END

MAKE MSG-LENGTH = V. LENGTH

EVALUATE MSG PROCESS TIME

PROCESSING TIME CONSUMED

LOCAL VARIABLES OF PROCESS HQ-DATA
=====

1 MSG (I) 2 V. LENGTH 3 V. TIME 4 UPDATE (A)

PROCESS
=====

DESCRIPTION

HQ REQUEST FOR STATUS DISPLAY FROM CHQ

HQ-REQ

ENTRY OPCODE PARM PARM PARM COMMENT
=====

START L3 NO
GIVEN MSG
RETURN MSG
CALL REQ-I/O WAIT 4
GIVEN PLANS 4 \$WAIT
200 CHQ MSG
END

MAKES I/O REQUEST TO CHQ

LOCAL VARIABLES OF PROCESS HQ-REQ
=====

1 MSG (I) 2 REQ-I/O (P) 3 PLANS (P) 4 CHQ (R)

PROCESS
=====

DESCRIPTION

OPERATING SYSTEM : INTERRUPT HANDLING AND ROUTING

INHANDLER

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
GIVEN  MSG
ASSIGN  MSG      CP      INDICATE CURRENT NODE CPU
COMPAE  MSG      CP      IS MSG AT DESTINATION ?
ASSIGN  CP      NETINSTR  MONITOR OVERHEAD FOR PLOT
M.OVHD  CP      OBTAIN CP-HANDLE INTERRUPT
ROUTE OH CONSTANT M.OVHD  DELAY FOR ROUTING
DEALLOC CP      RELEASE CPU TO OTHERS
CALL  CHLO  NOHAIT  0    FORWARD MESSAGE WITH I/O
GIVEN  MSG      100
FINISH  END
CONTROL ENTRY
COMPAE  MSG      $RESP  MESSAGE AT DESTINATION
ASSIGN  MSG      TASKPRI  IF RESPONSE-UP PRIORITY
HPCONTROL ENTRY
CALL  COITPOL  NOHAIT  PRIORITY  SET MESSAGE PRIORITY
GIVEN  MSG      HPCONTROL  SET MESSAGE PRIORITY
END  ENTRY
END

```

LOCAL VARIABLES OF PROCESS INHANDLER

```

=====
1 MSG  (I)  2 CP      3 M.OVHD  4 ROUTE.OH  (A)
5 CHLO  (P)  6 PRIORITY  7 CONTROL  (P)
PROCESS
MEMORIC
PLANS
REQUEST FOR PLANS FROM CHQ
=====

```

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  CHQ      NO
GIVEN  MSG
RETURN MSG      LENGTH
ASSIGN  MSG      V.LENGTH  MAKE MSG LENGTH = V.LENGTH
EVAL  V.TIME  MULTIPLY  EVALUATE MSG PROCESS TIME

```

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```

01 V.LENGTH
FORMAT CONSTANT V.TIME
CALL DISK.OP WAIT 10
GIVEN 10000 DK1
ASSIGN 10000
V.LENGTH
AUGMENT MSG TO 10000
END

```

LOCAL VARIABLES OF PROCESS PLANS

```

=====
1 MSG (1) 2 V.LENGTH (R) 3 V.TIME 4 FORMAT (A)
5 DISK.OP (P) 6 DK1
PROCESS
PNEUMONIC
=====
DESCRIPTION
=====
REQ-I/O GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O
=====

```

ENTRY	OF CODE	PAPH	PAPH	PAPH	COMMENT
START	ALL	NO			
GIVEN	PROCESS	PRIORITY	RESP.OPT		
		MSG.LNTH	TO.NODE	MSG	
CREATE	MSG				CREATE MESSAGE DATA TO RTE
ASSIGN	SCNDOE				INDICATE CURRENT NODE
	MSG	CNODE			INDICATE CURRENT NODE FROM
ASSIGN	SCNDOE	FNODE			INDICATE REQUESTED PROCESS
ASSIGN	PROCESS				INDICATE RELATIVE PRIORITY
ASSIGN	PRIORITY	RTASK			SHOWAIT OP & WAIT ON CALL
ASSIGN	MSG	TASKPRI			INDICATE LENGTH IN BITES
ASSIGN	RESP.OPT	RESPONSE			WHERE DOES PROCESS RESIDE
ASSIGN	MSG	LENGTH			DEFAULT TO NODE SELECT
COMPARE	MSG				ELSE-> NODE IS GIVEN
	EQ				
COMPARE	EQ				
	END				
ASSIGN	YES				
	GETNODE				
ASSIGN	TO.NODE	THODE			
ERANCH	MSG				
ENTRY	END	100			
ASSIGN	THODE				
	PROCESS				
	THODE				
ENTRY	MSG				
CALL	ESP-CALL WAIT	0			
GIVEN	MSG				

```
=====
LOCAL VARIABLES OF PROCESS REQ-I/O
=====
1 PROCESS (X) 2 PRIORITY 3 RESP.OPT 4 MSG.LENGTH
5 TO NODE 6 MSG (I) 7 ESR-CALL (P)
=====
PROCESS
=====
MEMORIC
=====
ROUTER
=====
OPERATING SYSTEM : INTERRUPT HANDLING AND ROUTING
=====
```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	ALL	NO		
	GIVEN	MSG			
	ASSIGN	MSG	CHODE		INDICATE CURRENT MODE CPU
		CP			
	COMPARE	MSG	CNODE	EQ	IS MSG AT DESTINATION ?
		MSG	THODE	CONTROL	
	ASSIGN	CP	NETINSTR		MONITOR OVERHEAD FOR PLOT
		M.OVHD			
	ROUTE.OH	CONSTANT	M.OVHD		
	CALL	CHLIO	NOHAI	0	DELAY FOR ROUTING
	GIVEN	MSG			FORWARD MESSAGE WITH I/O
	BRANCH	END	100		
CONTROL	ENTRY		TYPE	EQ	MESSAGE AT DESTINATION
	COMPARE	MSG			IF RESPONSE-UP PRIORITY
		RESP		HPCTRL	SET MESSAGE PRIORITY
	ASSIGN	MSG	TASKPRI		
		PRIORITY			
HPCTRL	ENTRY				PRIORITY=0 IF UNDEFINED
	CALL	CONTROL	NOHAI		PRIORITY CONTEXT SWITCH MESSAGE
	GIVEN	MSG			
END	ENTRY				
	END				

```

LOCAL VARIABLES OF PROCESS ROUTER
=====
1 MSG      (I) 2 CP      3 H.OVHD  4 ROUTE.OH (A)
5 CHLD     (P) 6 PRIORITY 7 CONTROL (P)
=====
PROCESS
=====
PHREMONIC
=====
TRACE      TURN ON TRACE OUTPUT
=====

```

ENTRY	OPCODE	PARM	PARM	COMMENT
000000	00	00	00	000000
000001	01	00	00	000001
000002	02	00	00	000002
000003	03	00	00	000003
000004	04	00	00	000004
000005	05	00	00	000005
000006	06	00	00	000006
000007	07	00	00	000007
000008	08	00	00	000008
000009	09	00	00	000009
000010	0A	00	00	000010
000011	0B	00	00	000011
000012	0C	00	00	000012
000013	0D	00	00	000013
000014	0E	00	00	000014
000015	0F	00	00	000015
000016	10	00	00	000016
000017	11	00	00	000017
000018	12	00	00	000018
000019	13	00	00	000019
000020	14	00	00	000020
000021	15	00	00	000021
000022	16	00	00	000022
000023	17	00	00	000023
000024	18	00	00	000024
000025	19	00	00	000025
000026	1A	00	00	000026
000027	1B	00	00	000027
000028	1C	00	00	000028
000029	1D	00	00	000029
000030	1E	00	00	000030
000031	1F	00	00	000031
000032	20	00	00	000032
000033	21	00	00	000033
000034	22	00	00	000034
000035	23	00	00	000035
000036	24	00	00	000036
000037	25	00	00	000037
000038	26	00	00	000038
000039	27	00	00	000039
000040	28	00	00	000040
000041	29	00	00	000041
000042	2A	00	00	000042
000043	2B	00	00	000043
000044	2C	00	00	000044
000045	2D	00	00	000045
000046	2E	00	00	000046
000047	2F	00	00	000047
000048	30	00	00	000048
000049	31	00	00	000049
000050	32	00	00	000050
000051	33	00	00	000051
000052	34	00	00	000052
000053	35	00	00	000053
000054	36	00	00	000054
000055	37	00	00	000055
000056	38	00	00	000056
000057	39	00	00	000057
000058	3A	00	00	000058
000059	3B	00	00	000059
000060	3C	00	00	000060
000061	3D	00	00	000061
000062	3E	00	00	000062
000063	3F	00	00	000063
000064	40	00	00	000064
000065	41	00	00	000065
000066	42	00	00	000066
000067	43	00	00	000067
000068	44	00	00	000068
000069	45	00	00	000069
000070	46	00	00	000070
000071	47	00	00	000071
000072	48	00	00	000072
000073	49	00	00	000073
000074	4A	00	00	000074
000075	4B	00	00	000075
000076	4C	00	00	000076
000077	4D	00	00	000077
000078	4E	00	00	000078
000079	4F	00	00	000079
000080	50	00	00	000080
000081	51	00	00	000081
000082	52	00	00	000082
000083	53	00	00	000083
0				

PAGE 17 START ALL NO TEST IF FLAG SET FOR TRACE
 COMPARE V-TRACE EQ NOTRACE
 0
 TRACE ON
 NOTRACE ENTRY
 END

LOAD DEFINITION.....

LOAD
 PHEMOMIC DESCRIPTION
 =====
 ABLOAD COMMUNICATIONS FROM AIRBASES
 LOAD NODES
 =====
 AB1 AB2

PROCESS	SCHEDULE	MEAN	DELTA	PRIORITY
PHEMOMIC MAX #	METHOD			
AB-DATA	100000	INTERVAL	ABRATE	10
AB REQ	100000	EXPONENT	ABRATE	5

LOAD
 PHEMOMIC DESCRIPTION
 =====
 HLOAD REQUEST DATA FROM CHQ
 LOAD NODES
 =====
 L3

PROCESS	SCHEDULE	MEAN	DELTA	PRIORITY
PHEMOMIC MAX #	METHOD			
H4 REQ	100000	EXPONENT	H4RATE	4

SCENARIO DEFINITION....

SCENARIO
 PHEMOMIC DESCRIPTION
 =====
 TEST01 SCENARIO FOR MINI HITRE 1

PERIOD
 LENGTH
 =====
 360000

APPENDIX C

TEST 5 MODEL - File Verification
TESTDBE.DBF Listing

```

#####
$ SIMULATION REPORT $
$ AISIM VERSION 2.0 $
$ HUGHES AIRCRAFT COMPANY $
$ 08/03/81 $
#####
GLOBAL CONSTANT DEFINITION.....

```

```

CONSTANT INITIAL
MEMORIC VALUE COMMENT
=====
C100 100.0 TEST CONSTANT VALUE 100
CS 5.0 TEST CONSTANT VALUE 5
CS0 50.0 TEST CONSTANT VALUE 50

```

TABLE DEFINITION.....

```

TABLE
MEMORIC TYPE DESCRIPTION
=====
ALPHATBL A ALPHA TABLE TEST FOR CYCLING THROUGH OFDS

```

```

X-VALUE Y-VALUE
=====
06 OFD6
07 OFD7
08 OFD8
09 OFD9
10 OFD10

```

```

TABLE
MEMORIC TYPE DESCRIPTION
=====
TC04 C TEST CONTINUOUS TABLE

```

```

X-VALUE Y-VALUE
=====
0.0 0.0
100.0 10.0
1000.0 100.0
200.0 20.0
300.0 30.0
400.0 40.0
500.0 50.0
600.0 60.0
700.0 70.0
800.0 80.0
900.0 90.0

```

PAGE 2

TABLE
MATH/LOGIC TYPE DESCRIPTION
=====

TOTIS D TEST DISCRETE TABLE

X-VALUE	Y-VALUE
0.0	0.0
100.0	10.0
1000.0	100.0
200.0	20.0
300.0	30.0
400.0	40.0
500.0	50.0
600.0	60.0
700.0	70.0
800.0	80.0
900.0	90.0

GLOBAL VARIABLE DEFINITION:.....

VARIABLE INITIAL	COMMENT
VABS 10.0	TEST EVAL ABSOLUTE RESULT
VADD 10.0	TEST EVAL ADD RESULT
VAFCS 2.0	TEST EVAL ARCSINE RESULT
VAFCSIN 1.141593	TEST EVAL APCSINE RESULT
VAFCTAN -1.14159	TEST EVAL APCTAN RESULT
VETA 10.0	TEST EVAL BETA RESULT
VEIN 0.5	TEST EVAL EINCHIAL RESULT
VCS -1.416147	TEST EVAL COSINE RESULT
VCTABLE 50.0	TEST EVAL CONTINUOUS TABLE RESULT
VDIV 10.0	TEST EVAL DIVIDE RESULT
VDTABLE 50.0	TEST EVAL DISCRETE TABLE RESULT
VERLANG 100.0	TEST EVAL EPLANG DISTRIBUTION
VERP 10.0	TEST EVAL EXPONENTIAL RESULT
VERPE 100.0	TEST EVAL EXPONENT E RESULT
VERP10 100.0	TEST EVAL EXPONENT 10 RESULT
VGAMMA 10.0	TEST EVAL GAMMA RESULT
VLOGE 4.605170	TEST EVAL LOG E RESULT
VLOGN 10.0	TEST EVAL LOGNORMAL RESULT
VLOG10 2.0	TEST EVAL LOG 10 RESULT
VMULT 10.0	TEST EVAL MULTIPLY RESULT
VREUSYQ 0	TEST ASSIGN REUSYQ
VWDLQ 0	TEST ASSIGN WDLQ
VNORMAL 10.0	TEST EVAL NORMAL RESULT
VREAITQ 0	TEST ASSIGN REAITQ
VPOISSON 110.0	TEST EVAL POISSON RESULT

PAGE 3
 VPOWER 10.0 TEST EVAL POWER RESULT
 VP2M 0.5 TEST EVAL RANDOM RESULT
 VSM 0.999297 TEST EVAL SINE RESULT
 VSORT 10.0 TEST EVAL SORT RESULT
 VSUB 10.0 TEST EVAL SUBTRACT RESULT
 VTAN -2.16504 TEST EVAL TANGENT RESULT
 VUNIFORM 10.0 TEST EVAL UNIFORM RESULT
 VREIBULL 10.0 TEST EVAL REIBULL RESULT

ITEM DEFINITION.....

QUEUE DEFINITION.....

QUEUE MAXIMUM
 PHENOMIC SIZE COMMENT

RESOURCE DEFINITION.....

RESOURCE TOTAL INITIAL
 PHENOMIC # UNITS # UNITS DESCRIPTION
 PESI 2.0 TEST RESOURCE 1
 ATTP INITIAL
 NAME VALUE
 COST 0

ARCHITECTURE LEGAL PATH DEFINITION

FROM TO NEXT VIA
 DEVICE DEVICE DEVICE LINK

ACTION DEFINITION.....

ACTION ACTION
 PHENOMIC CLASS COMMENT
 EVALUATE MACHINE TEST EVAL FUNCTIONS
 PROCESS MACHINE TEST DISTRIBUTION FUNCTIONS

PROCESS DEFINITION.....

PROCESS
 PHENOMIC DESCRIPTION
 OFDINIT OFD INITIATOR FOR 6 THROUGH 10

PAGE 4

ENTRY	OPCODE	PARM	PARM	COMMENT
START	ASSIGN	6	NO	LOOP COUNTER AND TBL INDEX
ENTRY	COMPARE	COUNTER	GT	CYCLE FOR ALL OFDS
END	END	10	END	INDEX INTO ALPHA TABLE
CALL	OFD	COUNTER	0	INITIATE OFD INDEX COUNTER
EVAL	ADD	COUNTER	1	INCREMENT LOOP COUNTER
BRANCH	NEXT	100		
END	END			

LOCAL VARIABLES OF PROCESS OFDINIT

ENTRY	OPCODE	PARM	PARM	COMMENT
1	COUNTER	2	ALPHATBL (T)	3 OFD

PROCESS

MEMORIC

OFD1

DESCRIPTION

TEST EXPONENTIAL DISTRIBUTION AND COMPARE

ENTRY	OPCODE	PARM	PARM	COMMENT
START	CALL	OFDINIT	0	INITIATE OFDS 6-10
PROCESS	EXPONENT	100.0		TST EXPONENTIAL ACTIO
ASSIGN	1.0	LOCAL1		
ASSIGN	2.0	LOCAL2		
ASSIGN	3.0	LOCAL3		
TESTEQ	ENTRY	COMPARE	EQ	TEST COMPARE EQ
EQTEST	ENTRY	COMPARE	EQTEST	TEST FALL THRU
TESTNE	ENTRY	COMPARE	NE	TEST FALL THRU

PAGE 6
 LOCAL VARIABLES OF PROCESS OFD1
 =====
 1 OFDINIT (P) 2 PROCESS (A) 3 LOCAL1 4 LOCAL2
 5 LOCAL3

PROCESS
 PNEUMONIC
 =====
 OFD10
 DESCRIPTION
 TEST INTERVAL SCHEDULE AND EVAL TRIG FUNCTIONS

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START					
EVAL		VLOG10	LOG10		
		100.0			
EVAL		VEXP10	POWER		
		10.0	VLOG10		
EVAL		VLOGE	LOGE		
		100.0			
EVAL		VEXPE	POWER		
		2.718281	VLOGE		
EVAL		VSIN	SINE		
		2			
EVAL		VARCSIN	ARCSINE		
		VSIN			
EVAL		VCOS	COSINE		
		2			
EVAL		VARCOS	ARCOSINE		
		VCOS			
EVAL		VTAN	TANGENT		
		2			
EVAL		VARCTAN	ARCTAN		
		VTAN			
END					

PROCESS
 PNEUMONIC
 =====
 OFD11
 DESCRIPTION
 TEST ALLOCATE & DEALLOCATE RESOURCE

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START					
ALLOC		RES1			TEST ALLOCATE
PROCESS		CONSTANT 100.0			
DEALLOC		RES1			TEST DEALLOCATE
END					

LOCAL VARIABLES OF PROCESS OFD11

```

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=====
1 PESS (P) 2 PROCESS (A)
PROCESS
MNEMONIC
=====
OF02 TEST LOGNORMAL DISTRIBUTION AND ASSIGN
=====

```

```

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START
ASSIGN RES1 MIDLEQ
ASSIGN RES1 MIDLEQ
ASSIGN RES1 NEUSYQ
ASSIGN RES1 NEUSYQ
ASSIGN RES1 MHAITQ
ASSIGN RES1 MHAITQ
CALL ENTRY
CALL OFD11 MHAIT 2.0 SET UP RESOURCE UTIL
LOOP CALL 4.0 SCHEDULE A NORMAL PROCESS
PROCESS LOGNORMAL 100.0 100.0 LOOP 4 TIMES
ASSIGN RES1 MIDLEQ
ASSIGN RES1 MIDLEQ
ASSIGN RES1 NEUSYQ
ASSIGN RES1 NEUSYQ
ASSIGN RES1 MHAITQ
ASSIGN RES1 MHAITQ
END
=====

```

```

LOCAL VARIABLES OF PROCESS OFD2
=====
1 PESS (P) 2 OFD11 (P) 3 PROCESS (A)
PROCESS
MNEMONIC
=====
OFD3 TEST NORMAL DISTRIBUTION
=====

```

```

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START
PROCESS NORMAL 100.0 100.0
END
=====

```

```

LOCAL VARIABLES OF PROCESS OFD3
=====
1 PROCESS (A)
PROCESS
MNEMONIC
=====
DESCRIPTION
=====

```

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 =====
 TEST UNIFORM DISTRIBUTION

ENTRY	OPCODE	PARAM	PARAM	COMMENT
START				
PROCESS	UNIFORM	100.00	100.00	
END				

LOCAL VARIABLES OF PROCESS OFD4
 =====
 1 PROCESS (A)
 PROCESS
 PHENOMIC
 =====
 OFD5
 TEST EPLANG DISTRIBUTION

ENTRY	OPCODE	PARAM	PARAM	COMMENT
START				
EVALUATE	EPLANG	100.0	100.0	TEST
END				

LOCAL VARIABLES OF PROCESS OFD5
 =====
 1 EVALUATE (A)
 PROCESS
 PHENOMIC
 =====
 OFD6
 TEST WEIBULL DISTRIBUTION

ENTRY	OPCODE	PARAM	PARAM	COMMENT
START				
EVALUATE	WEIBULL	100.0	100.0	TEST
END				

LOCAL VARIABLES OF PROCESS OFD6
 =====
 1 EVALUATE (A)
 PROCESS
 PHENOMIC
 =====
 OFD7
 TEST GAMMA DISTRIBUTION

```

PAGE 9
ENTRY OFCODE PARM VAL PARM COMMENT
=====
START
EVALUATE GAMMA 100.0 20. TEST
END

```

```

LOCAL VARIABLES OF PROCESS OFD7
=====
1 EVALUATE (A)
PROCESS
MATHOPIC
=====
DESCRIPTION
TEST POISSON SCHEDULE AND EVAL DISTRIBUTIONS
OFD8

```

```

ENTRY OFCODE PARM PARM PARM PARM COMMENT
=====
START
EVAL VRAN RANDOM
EVAL VBTH BINOMIAL
EVAL 100.0 10.0
EVAL VESTA BETA
EVAL 10.0 5.0
EVAL VEPLANG ERLANG
EVAL 10.0 5.0
EVAL VEXP EXPONENT
EVAL 10.0
EVAL VGAMMA GAMMA
EVAL 10.0 5.0
EVAL VLOGH LOGNORHL
EVAL 10.0 5.0
EVAL VNORHAL NORMAL
EVAL 10.0 5.0
EVAL VPOISSON POISSON
EVAL 10.0
EVAL VUNIFORM UNIFORM
EVAL 10.0 5.0
EVAL VWEIBULL WEIBULL
EVAL 10.0 5.0
END

```

```

LOCAL VARIABLES OF PROCESS OFD8
=====
1 VWEIBULL
PROCESS
MATHOPIC
=====
DESCRIPTION
TEST START SCHEDULE AND CONSTANT ACTION
OFD9

```

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ENTRY OPCODE PARM PARM PARM COMMENT

START
EVALUATE CONSTANT 100.00 TEST
END

LOCAL VARIABLES OF PROCESS OFD9

1 EVALUATE (A)

PROCESS

DESCRIPTION

TIMECALL TEST TIME CALL SCHEDULE AND EVAL APITHETIC/TABLE

ENTRY OPCODE PARM PARM PARM COMMENT

START
EVAL VADD ADD
EVAL 20.5 -10.5
EVALUATE CONSTANT 100.0
EVAL VSUB SUBTRACT
EVAL 6.5 -3.5
EVALUATE CONSTANT VSUB
EVAL VMULT MULTIPLY
EVAL -2.5 -4.0
EVALUATE CONSTANT VMULT
EVAL VDIV DIVIDE
EVAL -4.0 -0.40
EVALUATE CONSTANT VDIV
EVAL VPOWER POWER
EVAL 3.162277 2.0
EVALUATE CONSTANT VPOWER
EVAL VTEST SQT
EVAL 100.0
EVALUATE CONSTANT VTEST
EVAL VABS ABSOLUTE
EVAL -10.0
EVALUATE CONSTANT VABS
EVAL VCTABLE TCON
EVAL -50
EVAL VOTABLE TDIS
EVAL -50.0
EVAL VCTABLE TCON
EVAL 1050.0
EVAL VOTABLE TDIS
EVAL 1050.0

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EVAL	VCTABLE	TCOH
	150.0	
EVAL	VDTABLE	TDIS
	150.0	
EVAL	VCTABLE	TCOH
	250.0	
EVAL	VCTABLE	TDIS
	250.0	
EVAL	VCTABLE	TCOH
	500.0	
EVAL	VDTABLE	TDIS
	500.0	
EVAL	VCTABLE	TCOH
	750.0	
EVAL	VDTABLE	TDIS
	750.0	
EVAL	VCTABLE	TCOH
	850.0	
EVAL	VDTABLE	TDIS
	650.0	
END		

LOCAL VARIABLES OF PROCESS TIMECALL

1 EVALUATE (A)	2 TCOH	(T)	3 TDIS	(T)
----------------	--------	-----	--------	-----

LOAD DEFINITION.....

LOAD	DESCRIPTION
LOAD1	TEST SCHEDULE METHODS
	LOD1
	NODES
	RES1

PROCESS	MAX	SCHEDULE	MEAN	DELTA	PRIORITY
OFD1	100	EXPONENT	100		2.0
OFD2	100	LOGNORMAL	100	20.0	2.0
OFD3	100	NORMAL	100	20.0	2.0
OFD4	100	UNIFORM	100	20.0	2.0
OFD5	100	ERLANG	100	2	2.0

SCENARIO DEFINITION.....

SCENARIO

```

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=====
DESCRIPTION
=====
TEST1      TEST SCHEDULING METHODS
=====

PERIOD
LENGTH      10000
=====

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
PNEUMONIC PNEUMONIC PNEUMONIC PNEUMONIC PNEUMONIC PNEUMONIC
=====

1

TRIGGER TIME TO SCHEDULE TRIGGER TIME TO SCHEDULE
PNEUMONIC SCHEDULE PRIORITY PNEUMONIC SCHEDULE PRIORITY
=====
LOAD1 0 0 TIMECALL 5000 0
=====

***** 0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

```

APPENDIX D

Expected Results for Acceptance Tests 1-5

APPENDIX D

TEST 1 Statistics - Results Verification for
TESTDBA.DBF

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SIMULATION TIME = 100.00000 UNITS

VARIABLE REPORT

NUMERIC VARIABLES...

	TOTAL	VALUE	MINIMUM	MAXIMUM
VARIABLE SAMPLES. CURRENT...	MEAN...	STD DEV...	MINIMUM...	MAXIMUM...
V.COUNT1	1	10.000	0.	10.000

NON-NUMERIC VARIABLES...

CURRENT	CURRENT
VARIABLE TYPE	VALUE
=====	=====

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SIMULATION TIME = 100.00000 UNITS

ITEM REPORT

ITEM NAME	NUMBER CREATED	NUMBER DESTR'D	MINIMUM	TIME IN SYSTEM			STD DEV...
				MAXIMUM	AVERAGE		
ITEM1	10	10	5.00	5.00	5.00	0.	
ITEM2	10	10	4.00	4.00	4.00	0.	
ITEM3	10	10	3.00	3.00	3.00	0.	
ITEM4	10	10	2.00	2.00	2.00	0.	
ITEM5	10	10	1.00	1.00	1.00	0.	
ITEM6	10	10	0.	0.	0.	0.	
4ITEM1	10	9	10.00	90.00	50.00	25.82	
4ITEM2	10	9	10.00	90.00	50.00	25.82	
4ITEM3	10	9	10.00	90.00	50.00	25.82	
4ITEM4	9	9	0.	0.	0.	0.	

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SIMULATION TIME = 100.00000 UNITS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN.....	STD DEV...	MINIMUM..	MAXIMUM...	% TIME OF TOTAL
DELAY	90	3.500	3.862	1.000	10.000	315.000
USEFUL TIME	90	0.	0.	0.	0.	
DELAY TIME						

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SIMULATION TIME = 100.00000 UNITS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
INIT1						
TOTAL	1	10.000	10.000	0.	10.000	10.000
PROCESS WAIT	1	10.000	10.000	0.	10.000	10.000
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

1	1	0	1	0	0
---	---	---	---	---	---

PROCESS	DESCRIPTION	OCODE	PARM	PARM	PARM	COMMENT
INIT1	TEST CALL BLOCK					
1	START					
1	ASSIGN	1				INITIALIZE COUNTER
1	ENTRY					
11	NEXT					
11	COMPARE	L				CONTINUE FOR ALL CALLS TEST VALUE OF COUNTER
11	V.COUNT1					
10	CALL					INITIATE PARALLEL INSTANT
10	GIVEN	L				
10	EVAL	L				INCREMENT COUNTER
10	BRANCH					
10	ENTRY					BRANCH
1	WAIT					ENTRY
1	END					SYNCHRONIZE FOR ALL

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
INIT2						
TOTAL	1	10.000	10.000	0.	10.000	10.000
PROCESS WAIT	1	10.000	10.000	0.	10.000	10.000
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

1	1	0	1	0	0
---	---	---	---	---	---

```

=====
1 1 0 1 0 0
=====

```

```

PROCESS DESCRIPTION
=====
INIT1 TEST CALL BLOCK AND NOWAIT
=====

```

COUNT	ENTRY	OPCODE	PAPH	PAPH	COMMENT
1	START			NO	
1	ASSIGN	1			INITIALIZE COUNTER
1	ENTY				
11	CCMPARE	L		GT	CONTINUE FOR ALL CALLS
11	V.COUNT1			WAIT	TEST VALUE OF COUNTER
10	CALL	PROCESS2	BLOCK	0	INITIATE PARALLEL INSTANT
10	EVAL	L	ADD		INCREMENT COUNTER
10		L	1		
10	BRANCH	NEXT	100		BRANCH
1	ENTY				ENTRY
1	CALL	PROCESS2	NOWAIT	0	SYNCHRONIZE FOR ALL
1	WAIT				
1	END				

```

TOTAL
PROCESS SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM
=====
INIT3
TOTAL 1 60.000 60.000 0. 60.000 60.000
PROCESS WAIT 0 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.
=====

```

```

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.
=====
1 1 0 1 0 0
=====

```

ITEM	CREATED	RECEIVED	SENT	DESTR'D
ITEM1	10	0	10	0
ITEM2	10	0	10	0
ITEM3	10	0	10	0
ITEM4	10	0	10	0
ITEM5	10	0	10	0
ITEM6	10	0	10	0

```

PROCESS HOLDING TIME
ITEM # SHPLS MEAN MINIMUM MAXIMUM STD DEV
=====

```

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ITEM1	10	0.	0.	0.	0.
ITEM2	10	0.	0.	0.	0.
ITEM3	10	0.	0.	0.	0.
ITEM4	10	0.	0.	0.	0.
ITEM5	10	0.	0.	0.	0.
ITEM6	10	0.	0.	0.	0.

PROCESS DESCRIPTION

INIT3 CREATE, SEND, ACTION DELAY FOR 6 ITEMS

COUNT ENTRY	OPCODE	PARM	PARM	PARM	CORRENT
1	START				NO
10 NEXT	ENTRY				ENTRY
10	CREATE	ITEM1			
10	SEND	PROCESS3 ITEM1			SEND AN ITEM TO PROCESS3
10	DELAY	CONSTANT 1			ACTION
10	CREATE	ITEM2			
10	SEND	PROCESS3 ITEM2			
10	DELAY	CONSTANT 1			ACTION
10	CREATE	ITEM3			
10	SEND	PROCESS3 ITEM3			
10	DELAY	CONSTANT 1			ACTION
10	CREATE	ITEM4			
10	SEND	PROCESS3 ITEM4			
10	DELAY	CONSTANT 1			ACTION
10	CREATE	ITEM5			
10	SEND	PROCESS3 ITEM5			
10	DELAY	CONSTANT 1			ACTION
10	CREATE	ITEM6			
10	SEND	PROCESS3 ITEM6			
10	DELAY	CONSTANT 1			ACTION
10	LOOP	NEXT	V.COUNT1		ACTION
1	END				LOOP V.COUNT1 TIMES - NEXT

TOTAL
PROCESS SAMPLES, SUM, MEAN, STD DEV, MINIMUM, MAXIMUM, INITGA

TOTAL	1	0.	0.	0.	0.	0.
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND

1	1	0	1	0	0
---	---	---	---	---	---

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ITEM	CREATED	RECEIVED SENT	DESTR'D
4ITEM1	10	0	10
4ITEM2	10	0	10
4ITEM3	10	0	10

ITEM	# SHPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
4ITEM1	10	0	0	0	0
4ITEM2	10	0	0	0	0
4ITEM3	10	0	0	0	0

PROCESS DESCRIPTION
=====

INIT4A CREATE, SEND, LOOP 3 ITEMS

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	START					NO
10	NEXT					ENTRY
10	CREATE	4ITEM1	4ITEM2	4ITEM3		CREATE 3 ITEMS
10	SEND	PROCESS4	4ITEM1	4ITEM2		
10		4ITEM3				
10	LOOP	NEXT	V.COUNT1			LOOP V.COUNT1 TIMES - NEXT
1	END					

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
INIT4B							

ITEM	TOTAL	PROCESS WAIT	RESOURCE WAIT
4ITEM1	0	0	0
4ITEM2	0	0	0
4ITEM3	0	0	0

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.

1	1	0	0	1	0
---	---	---	---	---	---

ITEM	CREATED	RECEIVED SENT	DESTR'D
4ITEM4	9	0	9

ITEM	# SHPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
4ITEM4	9	0	0	0	0

PROCESS DESCRIPTION

INITIALS CREATE, SEND, LOOP WITH DELAY

COUNT	ENTRY	OF CODE	PARM	PARM	PARM	COMMENT
1	START					
10	ENTRY					ENTRY
10	DELAY	CONSTANT 10				ACTION
9	CREATE	4ITEM%				CREATE
9	SEND	PROCESS 4 ITEM%				
9	LOOP	NEXT V COUNT1				LOOP V COUNT1 TIMES - NEXT
0	END					

TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
PROCESS	10	55.000	5.500	2.872	1.000	10.000
PROCESS1	0	0.	0.	0.	0.	0.
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.

10 0 10 10 0 0

PROCESS DESCRIPTION

PROCESS1 GIVEN-TIME, ACTION DELAY

COUNT	ENTRY	OF CODE	PARM	PARM	PARM	COMMENT
10	START					
10	GIVEN	TIME				
10	DELAY	CONSTANT TIME				ACTION
10	END					

TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
PROCESS	11	110.000	10.000	0.	10.000	10.000
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.

10 0 10 10 0 0

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```

PROCESS      DESCRIPTION
=====
PROCESS2     ACTION DELAY (CONSTANT)
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
11          START
11          DELAY  CONSTANT 10
11          END

```

```

TOTAL
PROCESS      SAMPLES  SUM  MEAN  STD DEV  MINIMUM  MAXIMUM
=====
PROCESS3     TOTAL      10  0.  0.  0.  0.  0.
PROCESS3     PROCESS WAIT  0  0.  0.  0.  0.  0.
PROCESS3     RESOURCE WAIT  0  0.  0.  0.  0.  0.

```

```

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
10 10 0 10 0 0

```

```

ITEM  CREATED  RECEIVED  SENT  DESTROY
=====
ITEM1  0 10 0 10
ITEM2  0 10 0 10
ITEM3  0 10 0 10
ITEM4  0 10 0 10
ITEM5  0 10 0 10
ITEM6  0 10 0 10

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN MINIMUM MAXIMUM STD DEV
=====
ITEM1  10 5.00 5.00 5.00 0.
ITEM2  10 4.00 4.00 4.00 0.
ITEM3  10 3.00 3.00 3.00 0.
ITEM4  10 2.00 2.00 2.00 0.
ITEM5  10 1.00 1.00 1.00 0.
ITEM6  10 0. 0. 0. 0.

```

```

TOTAL #
SENT TO -- NUMBER IN RECEIVE POOL --
PROCESS CURRENT AVERAGE MAXIMUM
=====
ITEM1  10 0 .50 1.00 0.

```

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ITEM2	10	0	.40	1.00	1.00	1.00
ITEM3	10	0	.30	1.00	2.00	2.00
ITEM4	10	0	.20	1.00	3.00	3.00
ITEM5	10	0	.10	1.00	4.00	4.00
ITEM6	10	0	0.	1.00	5.00	5.00

PROCESS DESCRIPTION
RECEIVE AND DESTROY ITEMS -- SERIAL # NO MATCH

COUNT ENTRY	OPCODE	PARM	PARM	COMMENT
10	START		NO	
10	RECEIVE	ITEM1	ITEM2	ITEM3
10		ITEM4	ITEM5	ITEM6
10	DESTROY	ITEM1	ITEM2	ITEM3
10		ITEM4	ITEM5	ITEM6
10	END			DESTROY ALL SIX ITEMS

TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.

TOTAL	9	0.	0.	0.	0.	0.
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.

ITEM	CREATED	RECEIVED	SENT	DESTROYED
4ITEM1	0	0	0	9
4ITEM2	0	0	0	9
4ITEM3	0	0	0	9
4ITEM4	0	0	0	9

ITEM	PROCESS	HOLDING	TIME	MEAN	MINIMUM	MAXIMUM	STD DEV.
4ITEM1	9	50.00	10.00	90.00	25.82	90.00	25.82
4ITEM2	9	50.00	10.00	90.00	25.82	90.00	25.82
4ITEM3	9	50.00	10.00	90.00	25.82	90.00	25.82
4ITEM4	9	0.	0.	0.	0.	0.	0.

TOTAL # SENT TO -- NUMBER IN RECEIVE POOL -- AVG DELAY TIME DUE

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ITEM	PROCESS	CURRENT	AVERAGE	MAXIMUM	TO ITEM	TO ITEM
4ITEM1	19	1	5.50	10.00	0.	0.
4ITEM2	19	1	5.50	10.00	0.	0.
4ITEM3	19	1	5.50	10.00	0.	0.
4ITEM4	18	0	0.	1.00	0.	0.

PROCESS DESCRIPTION

=====

PROCESS4 RECEIVE AND DESTROY 4 ITEMS -- SERIAL 8 MATCH

=====

COUNT	ENTRY	OPCODE	PAPH	PAPH	PAPH	COMMENT
9	START			NO		MATCH
9	RECEIVE	4ITEM1	4ITEM2	4ITEM3		
9		4ITEM4				
9	DESTROY	4ITEM1	4ITEM2	4ITEM3		DESTROY 4 ITEMS
9		4ITEM4				
9	END					

APPENDIX D

TEST 2 Statistics - Results Verification for
TESTDBB.DBF

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SIMULATION TIME = 100.00000 UNITS

VARIABLE REPORT

NUMERIC VARIABLES...

	TOTAL	VALUE	STD DEV	MINIMUM	MAXIMUM
VARIABLE SAMPLES	CURRENT	MEAN			
V.CLOCK1	2	0.	0.	0.	0.
V.CLOCK2	3	0.	0.	0.	0.

NON-NUMERIC VARIABLES...

VARIABLE	CURRENT	VALUE
V.CHNL	RESOURCE CHIL	
V.CHODE	RESOURCE A	
V.NATND	RESOURCE B	

PAGE 0

SIMULATION TIME = 100.00000 UNITS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV.....	MINIMUM...	MAXIMUM...
A						
INTO IDLE	4					
OUT OF IDLE	3	1.000	.900	.300	0.	1.000
# IDLE			0.	0.	0.	0.
IDLE TIME						
INTO BUSY	3					
OUT OF BUSY	3	0.	.100	.300	0.	1.000
# BUSY			3.333	4.714	0.	10.000
BUSY TIME						
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE			0.	0.	0.	0.
INACTIVE TIME						
INTO WAIT	3					
OUT OF WAIT	3	0.	0.	0.	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME						
CURRENTLY ALLOCATED TO PROCESSES: NONE						
PROCESSES CURRENTLY WAITING: NONE						

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV.....	MINIMUM...	MAXIMUM...
B						
INTO IDLE	2					
OUT OF IDLE	1	1.000	1.000	0.	1.000	1.000
# IDLE			0.	0.	0.	0.
IDLE TIME						
INTO BUSY	1					
OUT OF BUSY	1	0.	0.	0.	0.	0.
# BUSY			0.	0.	0.	0.
BUSY TIME						

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INTO INACT.	0								
OUT OF INACT.	0								
# INACTIVE		0.	0.	0.	0.	0.	0.	0.	0.
INACTIVE TIME			0.	0.	0.	0.	0.	0.	0.
INTO WAIT	1								
OUT OF WAIT	1								
# WAITING		0.	0.	0.	0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.	0.	0.	0.
CURRENTLY ALLOCATED									
TO PROCESSES:	NONE								
PROCESSES CURRENTLY									
WAITING:	NONE								
TOTAL									
NUMBER									
CURRENT...									
MEAN.....									
STD DEV...									
MINIMUM...									
MAXIMUM...									
RESOURCE									
INTO IDLE	1								
OUT OF IDLE	0								
# IDLE		1.000	1.000	0.	0.	1.000	1.000	1.000	1.000
IDLE TIME			0.	0.	0.	0.	0.	0.	0.
INTO BUSY	0								
OUT OF BUSY	0								
# BUSY		0.	0.	0.	0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.	0.	0.	0.
INTO INACT.	0								
OUT OF INACT.	0								
# INACTIVE		0.	0.	0.	0.	0.	0.	0.	0.
INACTIVE TIME			0.	0.	0.	0.	0.	0.	0.
INTO WAIT	0								
OUT OF WAIT	0								
# WAITING		0.	0.	0.	0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.	0.	0.	0.
CURRENTLY ALLOCATED									
TO PROCESSES:	NONE								
PROCESSES CURRENTLY									
WAITING:	NONE								
TOTAL									
NUMBER									
CURRENT...									
MEAN.....									
STD DEV...									
MINIMUM...									
MAXIMUM...									
RESOURCE									

PAGE 30
CHNL

INTO IDLE	2								
OUT OF IDLE	1								
# IDLE		1.000	1.000	0.	1.000	0.	1.000	1.000	0.
IDLE TIME			0.	0.					
INTO BUSY	1								
OUT OF BUSY	1								
# BUSY		0.	0.	0.	0.	0.	0.	0.	0.
BUSY TIME			0.	0.					
INTO INACT.	0								
OUT OF INACT.	0								
# INACTIVE		0.	0.	0.	0.	0.	0.	0.	0.
INACTIVE TIME			0.	0.					
INTO WAIT	1								
OUT OF WAIT	1								
# WAITING		0.	0.	0.	0.	0.	0.	0.	0.
WAIT TIME			0.	0.					

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
C1						

PAGE 11
WAIT TIME

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

0.

0.

0.

0.

PAGE 12

SIMULATION TIME = 100.00000 UNITS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
ADSLAY	2	0.	0.	0.	0.	0.
USEFUL TIME	2	0.	0.	0.	0.	0.
DELAY TIME						

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
BOELAY	1	0.	0.	0.	0.	0.
USEFUL TIME	1	0.	0.	0.	0.	0.
DELAY TIME						

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
REPLY	1	10.000	0.	10.000	10.000	10.000
USEFUL TIME	1	0.	0.	0.	0.	0.
DELAY TIME						

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
TRANSFER	1	0.	0.	0.	0.	0.
USEFUL TIME	1	0.	0.	0.	0.	0.
DELAY TIME						

PAGE 13

SIMULATION TIME = 100 00000 UNITS

PROCESS REPORT:

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
APROC						
TOTAL	1	10.000	10.000	0.	10.000	10.000
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	3	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND
=====

1 1 0 1 0 0

PROCESS	DESCRIPTION
APROC	

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	START	A				
1	ALLOC	\$CNODE				TEST \$CNODE IN ALLOC CONTEXT
1	ADelay	CONSTANT 0				TEST \$CLOCK IN ACTION MEAN
1	ADelay	CONSTANT 0				
1	ASSIGN	\$CNODE				TEST ASSIGNMENT OF \$CNODE
1	ASSIGN	L.CNODE				TEST ASSIGNMENT \$CNODE
1	ASSIGN	\$CNODE				TEST PROCESS TO LOCAL
1	ASSIGN	V.CNODE				TEST \$NODE EVALUATION
1	ASSIGN	NEXT				TEST \$NODE GLOBAL TO LOCAL
1	ASSIGN	\$CNODE	NEXT			TEST \$NXTNODE
1	ASSIGN	\$CNODE	BPROC			TEST ASSIGNMENT & COMPARE
1	ASSIGN	\$CNODE	EPROC			SHOULD NOT EXECUTE
1	COMPARE	LB1		EQ		TEST \$NXTNODE
1	COMPARE	LB2		N1		
0	BRANCH	N1	100			
1	ENTRY					
1	ASSIGN	\$NXTNODE LB1				
1	ASSIGN	LB3				
1	ASSIGN	\$NXTNODE LB2				
1	ASSIGN	V.NEXT				
1	COMPARE	LB3		EQ		TEST \$NXTNODE TO LOCAL

PAGE 14

1	BRANCH	N2	100	N2	
0	ENTRY				
1	ASSIGN	\$CHNREL B			TEST \$CHNREL TO LOCAL RES.
1		L1.CHNL			
1	ASSIGN	\$CHNREL B3			TEST \$CHNREL TO LOCAL
1		L2.CHNL			
1	ASSIGN	\$CHNREL V.NEXT			TEST \$CHNREL GLOBAL
1		V.CHNL			
1	COMPARE	\$CNODE		EQ	TEST COMPARE CONTEXT \$CNODE
1		\$CNODE		A1	
0	BRANCH	A1	100		
1	ENTRY				
1	COMPARE	L1.CNODE		EQ	TEST CONTEXT \$CNODE TO LOC
1		\$CNODE		A2	
0	BRANCH	A2	100		
1	ENTRY				
1	COMPARE	\$CNODE		EQ	TEST CONTEXT \$CNODE-GLOBAL
1		\$CNODE		A3	
0	BRANCH	A3	100		
1	ENTRY				
1	COMPARE	L1.NXTID		EQ	TEST \$NXTID GLOBAL-LOCAL
1		V.NXTID		A4	
0	BRANCH	A4	100		
1	ENTRY				
1	COMPARE	L1.CHNL		EQ	TEST \$CHNREL COMPARE
1		L2.CHNL		A5	
0	BRANCH	A5	100		
1	ENTRY				
1	COMPARE	V.CHNL		EQ	TEST ASSIGN \$CHNREL
1		L1.CHNL		A6	
0	BRANCH	A6	100		
1	ENTRY				
1	TEST	L2.CHNL	A7		AVAILABILITY OF \$CHNL
1	BRANCH	A7	100		
1	ENTRY				
1	ALLOC	L2.CHNL			SWITCH BUSY FLAG ON CHNL
1	TEST	L2.CHNL	A8		TEST SHOULD BE FAILED
0	BRANCH	A8	100		
1	ENTRY				
1	DEALLOC	\$CNODE			RELEASE CURRENT NODE
1	TRANSFER	CONSTANT \$CLOCK			TRANSFER DATA OVER CHANNEL
1	DEALLOC	L2.CHNL			RELEASE CURRENT CHNREL
1	CALL	BPROC	NOWAIT		TEST PARAMETER BINDING
1	GIVEN	\$CLOCK	\$CNODE	0	
1	SUSPEND			\$TASK	TEST BINDING OF \$TASK
1	END				
	TOTAL				

PAGE 15
 PROCESS
 SAMPLES... MEAN... STD DEV... MINIMUM... MAXIMUM...
 BPROC

	1	10,000	10,000	0.	10,000	10,000	10,000
TOTAL	1	10,000	10,000	0.	10,000	10,000	10,000
PROCESS WAIT	0	0.	0.	0.	0.	0.	0.
RESOURCE WAIT	2	0.	0.	0.	0.	0.	0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
 SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.
 1 0 1 1 0 0

PROCESS DESCRIPTION
 BPROC

COUNT	ENTRY	OPCODE	PAPH	PAPH	PAPH	COMMENT
1	START	B				
1	GIVEN	LNODE	LNODE	LTASK		LET CURRENT NODE REGISTER
1	ASSIGN	\$NODE	BPROC			
1		\$CHORE				MAKE B BUSY
1	ALLOC	\$CHORE				
1	EDelay	CONSTANT	\$CLOCK			TEST AVAILABILITY OF B
1	TEST	\$CHODE	B1			
0	BRANCH	B1	100			
1	ENTRY					
1	DEALLOC	\$CHODE				TEST EVAL CONTEXT \$CLOCK
1	EVAL	L1	ADD			
1		0	\$CLOCK			
1	EVAL	L2	SUBTRACT			
1		0				TEST RESULTS OF EVAL
1	COMPARE	L1		EQ		
1		L2		B2		
1	BRANCH	B2	100			
0	ENTRY					EVAL GLOBAL VARIABLE TEST
1	EVAL	V.CLOCK1	ADD			
1		0	\$CLOCK			
1	EVAL	V.CLOCK2	SUBTRACT			
1		0	\$CLOCK			EVAL ABSOLUTE \$CLOCK
1	EVAL	V.CLOCK2	ABSOLUTE			
1		V.CLOCK2				TEST ARITHMETIC CONTEXT
1	COMPARE	V.CLOCK1		EQ		
1		V.CLOCK2		B3		
1	BRANCH	B3	100			
0	ENTRY					ALLOCATE PASSED PARAMETER
1	ALLOC	LNODE				
1	PEPLY	CONSTANT	10			TEST AVAILABILITY OF RES.
1	TEST	LNODE	B4			

```

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0
1 B4
1 ENTRY
1 DEALLOC LINKDE
1 PPSIME LTASK
1 END

FREE UP CHANNEL
RESTART PARENT PROCESS

TOTAL
SAMPLES. SUM. MEAN STD DEV MINIMUM MAXIMUM
PROCESS
TRACE
TOTAL 1 0. 0. 0. 0. 0.
PROCESS WAIT 0 0. 0. 0. 0. 0.
PROCESS WAIT 0 0. 0. 0. 0. 0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
1 1 0 1 0 0

PROCESS DESCRIPTION
TRACE TURN ON THE TRACE CAPABILITY

COUNT ENTRY OPCODE PARM PARM COMMENT
1 START ALL NO
1 TRACE ON
1 END

ENABLE TRACE OF KEYWORD

```

APPENDIX D

TEST 3 Statistics - Results Verification for
TESTDBC.DBF

PAGE 7

SIMULATION TIME = 1400.00000 UNITS

VARIABLE REPORT

NUMERIC VARIABLES...

	TOTAL	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
VARIABLE SAMPLES						
GAMMA1	1	300.000	300.000	0.	300.000	300.000
GAMMA2	1	.001	.001	0.	.001	.001

NON-NUMERIC VARIABLES...

VARIABLE TYPE	CURRENT	VALUE

PAGE 8

SIMULATION TIME = 1400.00000 UNITS

ITEM REPORT

ITEM NAME	NUMBER CREATED	NUMBER DESTR'D	TIME IN SYSTEM		
			MINIMUM	AVERAGE	STD DEV
MSG	400	400	.09	100.56	27.48
					34.65

PAGE 9

SIMULATION TIME = 1400.00000 UNITS

QUEUE REPORT

QUEUE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
=====	=====	=====	=====	=====	=====	=====
BUFFER	400					
FILED ON	400					
REMOVED FROM						
# IN QUEUE		0.	7.766	21.054	0.	101.000
TIME IN QUEUE			27.182	34.654	.000	100.284
TASKS BLOCKED	0					
TASKS RESUMED	0					
# BEING BLOCKED		0.	0.	0.	0.	0.
TIME BLOCKED			0.	0.	0.	0.

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SIMULATION TIME = 1400.00000 UNITS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
SEMA						
INTO IDLE	401					
OUT OF IDLE	400	1.000	.958	.201	0.	1.000
% IDLE			.667	1.881	0.	27.828
IDLE TIME						
INTO BUSY	400					
OUT OF BUSY	400	0.	.042	.201	0.	1.000
% BUSY			.147	.089	.000	.303
BUSY TIME						
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
% INACTIVE			0.	0.	0.	0.
INACTIVE TIME						
INTO WAIT	400					
OUT OF WAIT	400	0.	.006	.084	0.	2.000
% WAITING			.022	.057	0.	.394
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
STATION						
INTO IDLE	1					
OUT OF IDLE	0	1.000	1.000	0.	1.000	1.000
% IDLE			0.	0.	0.	0.
IDLE TIME						
INTO BUSY	0					
OUT OF BUSY	0	0.	0.	0.	0.	0.
% BUSY			0.	0.	0.	0.
BUSY TIME						

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INTO INACT.	0								
OUT OF INACT.	0								
# INACTIVE		0.	0.	0.	0.	0.	0.	0.	0.
INACTIVE TIME									
INTO WAIT	0								
OUT OF WAIT	0								
# WAITING		0.	0.	0.	0.	0.	0.	0.	0.
WAIT TIME									

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

TOTAL									
RESOURCE	NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM			
STATION	=====	=====	=====	=====	=====	=====			
INTO IDLE	1								
OUT OF IDLE	0	1.000	1.000	0.	1.000	1.000			
# IDLE			0.	0.	0.	0.			
IDLE TIME									
INTO BUSY	0								
OUT OF BUSY	0	0.	0.	0.	0.	0.			
# BUSY			0.	0.	0.	0.			
BUSY TIME									
INTO INACT.	0								
OUT OF INACT.	0	0.	0.	0.	0.	0.			
# INACTIVE			0.	0.	0.	0.			
INACTIVE TIME									
INTO WAIT	0								
OUT OF WAIT	0	0.	0.	0.	0.	0.			
# WAITING			0.	0.	0.	0.			
WAIT TIME									

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

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SIMULATION TIME = 1400.00000 UNITS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM.. MAXIMUM...		% TIME OF TOTAL
READ-MSG	400	.147	.089	.000	.300	4.212
USEFUL TIME	400	0.	0.	0.	0.	
DELAY TIME	400	0.	0.	0.	0.	

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM.. MAXIMUM...		% TIME OF TOTAL
SENDING	400	.147	.089	.000	.300	4.213
USEFUL TIME	400	0.	0.	0.	0.	
DELAY TIME	400	0.	0.	0.	0.	

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SIMULATION TIME = 1400.00000 UNITS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
RECEIVE	4599	58.968	.013	.049	0.	.300
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

4599 4599 0 4599 0 0

ITEM CREATED RECEIVED SENT DESIR'D

MSG 0 0 0 400

PROCESS HOLDING TIME

ITEM	# SHPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
MSG	400	.15	.00	.30	.09

PROCESS DESCRIPTION

RECEIVE RECEIVE MESSAGES FROM TRANSMIT

CON:IT	ENTRY	OF:CODE	PARM	PARM	PARM	COMMENT
4599	START	STATIONH2	NO			TEST FOR BUFFER USE
4599	TEST	SEMA	ABORT			REMOVE BY FIFO DISCIPLINE
4599	REMOVE	FIRST	MSG			WHEN MSG=0 BUFFER IS EMPTY
4599	COMPARE	MSG				EQ
4599		0				ABORT
400	ASSIGN	MSG	LENGTH			MESSAGE LENGTH IS READ
400		ALPHA				
400	EVAL	MU	MULTIPLY			CALCULATE RECEPTION TIME
400		ALPHA	GAMMA2			
400	READ-MSG	UNIFORM	MU			TIME TO PROCESS MESSAGE
400	DESTROY	MSG				MSG ELIMINATED FROM SYSTEM
4599	ENTRY					ENTER FROM COMPARE & TEST
4599	ABORT					
4599	END					

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
RECEIVE	4599	58.968	.013	.049	0.	.300

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 =====
 TRANSMIT
 =====
 TOTAL 400 67.705 .169 .107 .000 .671
 PROCESS WAIT 0 0 0 0 0 0
 RESOURCE WAIT 400 8.737 .022 .057 0 .394
 =====

TOTAL # AUTO # CALL # OF # NOT # TIMES
 SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
 =====

ITEM CREATED RECEIVED SENT DESTROY
 =====
 MSG 400 0 0 0 0

PROCESS HOLDING TIME
 ITEM # SMPLS MEAN..... MINIMUM.. MAXIMUM... STD DEV...
 =====
 MSG 400 .15 .00 .30 .09
 =====

PROCESS DESCRIPTION
 =====
 TRANSMIT TRANSMITTING MESSAGES TO RECEIVER
 =====

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
400	START	STATION	NO			
400	ALLOC	SEMA				RESOURCE FOR SENDING MSG
400	CREATE	MSG				INTRODUCE MSG INTO SYSTEM
400	EVAL	ALPHA	RANDOM			GENERATE RANDOM NUMBER
400	EVAL	ALPHA	MULTIPLY			THICE AVERAGE TIMES ALPHA
400	ASSIGN	ALPHA	GAMMA1			SET MESSAGE LENGTH
400	EVAL	MSG	LENGTH			CALCULATE TRANSMIT TIME
400	SENDING	UNIFORM	MU			TIME CONSUMED TRANSMITTING
400	ASSIGN	ALPHA	GAMMA2			SET MESSAGE LENGTH
400	FILE	MSG	LENGTH			STORE MSG ON BUFFER
400	DEALLOC	SEMA	LAST			RELEASE RESOURCE SEMA
400	END					

APPENDIX D

TEST 4 Statistics - Results Verification for
TESTDBD.DBF

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SIMULATION TIME = 3600000.00000 UNITS

CONSTANT REPORT

CURRENT
CONSTANT VALUE...

V TRACE 0.

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SIMULATION TIME = 3600000 00000 UNITS

VARIABLE REPORT

NUMERIC VARIABLES...

TOTAL		VALUE			
VARIABLE	SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM MAXIMUM
AEOPATE	1	60000.000	60000.000	0.	60000.000 60000.000
ABPPATE	1	36000.000	36000.000	0.	36000.000 36000.000
CHVPATE	1	.407	.407	0.	.407 .407
HCVPATE	1	72000.000	72000.000	0.	72000.000 72000.000
TIME1	1	30.000	30.000	0.	30.000 30.000
VWATE	1	1.628	1.628	0.	1.628 1.628

NON NUMERIC VARIABLES...

CURRENT CURRENT
VARIABLE TYPE VALUE

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SIMULATION TIME = 3600000.00000 UNITS

ITEM REPORT

ITEM NAME	NUMBER CREATED	NUMBER DESTROYED	TIME IN SYSTEM			
			MINIMUM	MAXIMUM	AVERAGE	STD DEV
=====	=====	=====	=====	=====	=====	=====
MUC	626	626	2193.55	5749.13	3727.00	1190.02

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SIMULATION TIME = 3600000.00000 UNITS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
290						
289						
INTO IDLE	1.000	1.000	1.000	.001	0.	1.000
OUT OF IDLE						
# IDLE	10267.235	16256.127			0.000	60000.799
IDLE TIME						
289						
289						
INTO BUSY	0.	0.000	.001	0.	0.	1.000
OUT OF BUSY						
# BUSY	.435	.353	.000	.998		
BUSY TIME						
0						
0						
INTO INACT.	0.	0.	0.	0.	0.	0.
OUT OF INACT.						
# INACTIVE	0.	0.	0.	0.	0.	0.
INACTIVE TIME						
289						
289						
INTO WAIT	0.	0.	.384	0.	0.	1.000
OUT OF WAIT						
# WAITING	.339	.339	.000	.999		
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
290						
289						
INTO IDLE	1.000	1.000	1.000	.001	0.	1.000
OUT OF IDLE						
# IDLE	12266.920	16262.777			0.000	60000.799
IDLE TIME						
289						
289						
INTO BUSY	0.	0.000	.001	0.	0.	1.000
OUT OF BUSY						
# BUSY	.406	.363	.000	.997		
BUSY TIME						

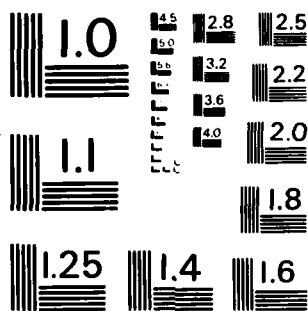
AD-A195 760

AISIM (AUTOMATED INTERACTIVE SIMULATION MODEL)
INSTALLATION AND ACCEPTANC... (U) HUGHES AIRCRAFT CO
FULLERTON CA GROUND SYSTEMS GROUP W AUSTELL ET AL.
26 FEB 82 ESD-TR-83-216 F19628-79-C-0153 F/G 9/2

UNCLASSIFIED

3/3
NL

END
DATE
FILMED
1-84
DTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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INTO INACT.	0	0.	0.	0.	0.	0.	0.
OUT OF INACT.	0	0.	0.	0.	0.	0.	0.
# INACTIVE							
INACTIVE TIME							
INTO WAIT	289	0.	0.	0.	0.	0.	1.000
OUT OF WAIT	289	0.	0.	0.	0.	0.	.997
# WAITING							
WAIT TIME							

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

CHQ

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
INTO IDLE	391					
OUT OF IDLE	390	1.000	.972	.166	0.	1.000
# IDLE			8026.471	13210.950	.000	56277.317
IDLE TIME						
INTO BUSY	390					
OUT OF BUSY	390	0.	.028	.166	0.	1.000
# BUSY			263.042	166.367	11.253	415.071
BUSY TIME						
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE						
INACTIVE TIME						
INTO WAIT	390					
OUT OF WAIT	390	0.	.002	.040	0.	1.000
# WAITING			14.904	25.226	.000	117.250
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

TOTAL

RESOURCE	NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
----------	--------	------------	-----------	------------	------------	------------

293	INTO IDLE	1.000	.930	.256	0.	1.000
292	OUT OF IDLE					
	# IDLE					
	IDLE TIME	11268.251	13592.710		.000	56338.000
292	INTO BUSY					
292	OUT OF BUSY	0.	.070	.256	0.	1.000
	# BUSY					
	BUSY TIME	868.430	437.359		325.520	1221.399
0	INTO INACT.					
0	OUT OF INACT.					
	# INACTIVE	0.	0.	0.	0.	0.
	INACTIVE TIME	0.	0.	0.	0.	0.
292	INTO WAIT					
292	OUT OF WAIT					
	# WAITING	0.	.062	.316	0.	3.000
	WAIT TIME	762.491	985.521		0.	2996.099

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PPROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH1.B						
INTO IDLE	175					
OUT OF IDLE	174					
# IDLE		1.000	.970	.172	0.	1.000
IDLE TIME			19745.624	16483.206	379.995	58780.099
INTO BUSY	174					
OUT OF BUSY	174					
# BUSY		0.	.030	.172	0.	1.000
BUSY TIME			629.304	423.657	325.520	1220.799
INTO INACT.	0					
OUT OF INACT.	0					
# INACTIVE		0.	0.	0.	0.	0.
INACTIVE TIME			0.	0.	0.	0.
INTO WAIT	174					
OUT OF WAIT	174					
# WAITING		0.	0.	0.	0.	1.000

PAGE 25 WAIT TIME .846 .295 .000 .995

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CH2.A						
INTO IDLE	293					
OUT OF IDLE	292					
# IDLE		1.000	.930	.256	0.	1.000
IDLE TIME			11268.251	15592.710	.000	56338.000
INTO BUSY	292					
OUT OF BUSY	292					
# BUSY		0.	.070	.256	0.	1.000
BUSY TIME			868.430	437.359	325.520	1221.399
INTO INACT.	0					
OUT OF INACT.	0					
# INACTIVE		0.	0.	0.	0.	0.
INACTIVE TIME			0.	0.	0.	0.
INTO WAIT	292					
OUT OF WAIT	292					
# WAITING		0.	.062	.316	0.	3.000
WAIT TIME			762.491	985.521	0.	2996.099
CURRENTLY ALLOCATED TO PROCESSES: NONE						
PROCESSES CURRENTLY WAITING: NONE						

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CH2.B						
INTO IDLE	175					
OUT OF IDLE	174					
# IDLE		1.000	.970	.172	0.	1.000
IDLE TIME			19745.166	16436.432	373.369	58780.099
INTO BUSY	174					
OUT OF BUSY	174					

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# BUSY	0.	.030	.172	0.	1.000
BUSY TIME	629.276	423.677	325.520	1220.799	
INTO INACT.	0				
OUT OF INACT.	0				
# INACTIVE	0.	0.	0.	0.	0.
INACTIVE TIME	0.	0.	0.	0.	0.
INTO WAIT	174				
OUT OF WAIT	174				
# WAITING	0.	0.	0.	0.	1.000
WAIT TIME	0.	.218	.262	.000	.994
CURRENTLY ALLOCATED					
TO PROCESSES:	NONE				
PROCESSES CURRENTLY					
WAITING:	NONE				

RESOURCE	TOTAL	MEAN	STD DEV	MINIMUM	MAXIMUM
=====	=====	=====	=====	=====	=====

CH3.A

INTO IDLE	467				
OUT OF IDLE	466				
# IDLE	1.000	.975	.157	0.	1.000
IDLE TIME	7409.114	13753.414	0.	58169.700	
INTO BUSY	466				
OUT OF BUSY	466				
# BUSY	0.	.025	.157	0.	1.000
BUSY TIME	195.110	111.956	61.360	306.049	
INTO INACT.	0				
OUT OF INACT.	0				
# INACTIVE	0.	0.	0.	0.	0.
INACTIVE TIME	0.	0.	0.	0.	0.
INTO WAIT	466				
OUT OF WAIT	466				
# WAITING	0.	.007	.086	0.	1.000
WAIT TIME	57.705	97.751	0.	225.875	

CURRENTLY ALLOCATED	
TO PROCESSES:	NONE
PROCESSES CURRENTLY	
WAITING:	NONE

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RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CH3.B						

INTO IDLE	231					
OUT OF IDLE	230	1.000	15303.640	24957.013	0.	1.000
# IDLE			.995	.072	0.	1.000
IDLE TIME					252.766	142450.548

INTO BUSY	230					
OUT OF BUSY	230	0.	.005	.072	0.	1.000
# BUSY			61.522	.325	61.200	62.176
BUSY TIME						

INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE			0.	0.	0.	0.
INACTIVE TIME						

INTC WAIT	230					
OUT OF WAIT	230	0.	0.	0.	0.	1.000
# WAITING			.322	.325	.000	.976
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CH5.A						

INTO IDLE	391					
OUT OF IDLE	390	1.000	8934.156	13455.340	0.	1.000
# IDLE			.984	.126	0.	1.000
IDLE TIME					.000	57911.674

INTO BUSY	390					
OUT OF BUSY	390	0.	.016	.126	0.	1.000
# BUSY			149.435	102.806	61.380	306.049
BUSY TIME						

INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE			0.	0.	0.	0.
INACTIVE TIME						

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INTO WAIT	390						
OUT OF WAIT	390						
# WAITING		0.	.000	.001	0.	1.000	
WAIT TIME			.356	.401	.000	3.636	

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH5.B						

INTO IDLE	273					
OUT OF IDLE	272					
# IDLE		1.000	.994	.078	0.	1.000
IDLE TIME			12927.335	18595.900	252.573	88274.030

INTO BUSY	272					
OUT OF BUSY	272					
# BUSY		0.	.006	.078	0.	1.000
BUSY TIME			61.711	.322	61.380	82.355

INTO INACT.	0					
OUT OF INACT.	0					
# INACTIVE		0.	0.	0.	0.	0.
INACTIVE TIME			0.	0.	0.	0.

INTO WAIT	272					
OUT OF WAIT	272					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME			.331	.322	.000	.975

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH6.A						

INTO IDLE	43					
OUT OF IDLE	42					
# IDLE		1.000	.996	.062	0.	1.000
IDLE TIME			83787.164	96780.378	1112.723	432881.692

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INTO BUSY	42						
OUT OF BUSY	42	0.	.062	0.	1.000	326.512	
# BUSY							
BUSY TIME			.329	325.525			
INTO INACT.	0						
OUT OF INACT.	0	0.	0.	0.	0.	0.	
# INACTIVE							
INACTIVE TIME			0.	0.	0.	0.	
INTO WAIT	42						
OUT OF WAIT	42	0.	0.	0.	1.000	.993	
# WAITING			.329	.005			
WAIT TIME							

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH6.B	=====	=====	=====	=====	=====	=====

INTO IDLE	43					
OUT OF IDLE	42	1.000	.996	0.	1.000	
# IDLE						
IDLE TIME		63732.077	96677.308	1072.319	432898.448	

INTO BUSY	42					
OUT OF BUSY	42	0.	.062	0.	1.000	326.496
# BUSY						
BUSY TIME			.328	325.520		

INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE						
INACTIVE TIME			0.	0.	0.	0.

INTO WAIT	42					
OUT OF WAIT	42	0.	0.	0.	1.000	.976
# WAITING						
WAIT TIME			.328	0.		

CURRENTLY ALLOCATED
TO PROCESSES: NONE

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PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH7.A						
INTO IDLE	43					
OUT OF IDLE	42	1.000	.996	.062	0.	1.000
# IDLE						
IDLE TIME			83741.720	96681.456	1072.839	432897.968
INTO BUSY	42					
OUT OF BUSY	42	0.	.004	.062	0.	1.000
# BUSY						
BUSY TIME			325.926	.340	325.522	326.496
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE						
INACTIVE TIME			0.	0.	0.	0.
INTO WAIT	42					
OUT OF WAIT	42	0.	0.	0.	0.	1.000
# WAITING						
WAIT TIME			.406	.340	.003	.976

CURRENTLY ALLOCATED
TO PROCESSES: NONE
PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH7.B						
INTO IDLE	161					
OUT OF IDLE	160	1.000	.956	.205	0.	1.000
# IDLE						
IDLE TIME			21173.641	24246.950	.000	62986.574
INTO BUSY	160					
OUT OF BUSY	160	0.	.044	.205	0.	1.000
# BUSY						
BUSY TIME			986.037	393.847	325.534	1221.274
INTO INACT.	0					
OUT OF INACT.	0					

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# INACTIVE	0.	0.	0.	0.	0.
INACTIVE TIME	0.	0.	0.	0.	0.
INTO WAIT	160				
OUT OF WAIT	160				
# WAITING	0.	.015	.122	0.	1.000
WAIT TIME	337.603	441.330	0.	0.	916.274

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE TOTAL
NUMBER CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...
=====

CH6.A

INTO IDLE	273				
OUT OF IDLE	272				
# IDLE	1.000	.975	.155	0.	1.000
IDLE TIME	12682.605	18597.202	0.428	0.000	68029.510
INTO BUSY	272				
OUT OF BUSY	272				
# BUSY	0.	.025	.155	0.	1.000
BUSY TIME	325.663	.331	325.520	326.516	

INTO INACT.	0				
OUT OF INACT.	0				
# INACTIVE	0.	0.	0.	0.	0.
INACTIVE TIME	0.	0.	0.	0.	0.
INTO WAIT	272				
OUT OF WAIT	272				
# WAITING	0.	0.	0.	0.	1.000
WAIT TIME	.343	.331	.000	.996	

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE TOTAL
NUMBER CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...
=====

CH6.B

INTO IDLE	391				
-----------	-----	--	--	--	--

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OUT OF IDLE	390	1.000	.935	.246	0.	1.000
# IDLE		8492.712	13207.335	.000	56292.798	
IDLE TIME						
INTO BUSY	390	0.	.065	.246	0.	1.000
OUT OF BUSY	390		596.708	411.191	325.520	1221.449
# BUSY						
BUSY TIME						
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INACTIVE TIME						
INTO WAIT	390	0.	.025	.158	0.	2.000
OUT OF WAIT	390		229.909	334.922	.000	1040.386
# WAITING						
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN.....	STD DEV....	MINIMUM...	MAXIMUM...
CH9.A						
INTO IDLE	1	1.000	1.000	0.	1.000	1.000
OUT OF IDLE	0		0.	0.	0.	0.
# IDLE						
IDLE TIME						
INTO BUSY	0	0.	0.	0.	0.	0.
OUT OF BUSY	0		0.	0.	0.	0.
# BUSY						
BUSY TIME						
INTO INACT.	0	0.	0.	0.	0.	0.
OUT OF INACT.	0		0.	0.	0.	0.
# INACTIVE						
INACTIVE TIME						
INTO WAIT	0	0.	0.	0.	0.	0.
OUT OF WAIT	0		0.	0.	0.	0.
# WAITING						
WAIT TIME						

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CURRENTLY ALLOCATED
TO PROCESSES: NONE
PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH9.B						
INTO IDLE	1					
OUT OF IDLE	0	1.000	1.000	0.	1.000	1.000
# IDLE			0.	0.	0.	0.
IDLE TIME						
INTO BUSY	0					
OUT OF BUSY	0	0.	0.	0.	0.	0.
# BUSY			0.	0.	0.	0.
BUSY TIME						
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE			0.	0.	0.	0.
INACTIVE TIME						
INTO WAIT	0					
OUT OF WAIT	0	0.	0.	0.	0.	0.
# WAITING			0.	0.	0.	0.
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE
PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
Dh1						
INTO IDLE	273					
OUT OF IDLE	272	1.000	.997	.058	0.	1.000
# IDLE			12962.714	18597.589	327.520	88297.829
IDLE TIME						
INTO BUSY	272					
OUT OF BUSY	272	0.	.003	.058	0.	1.000
# BUSY			44.566	19.646	4.115	87.551
BUSY TIME						

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INTO INACT. 0
 OUT OF INACT. 0
 # INACTIVE 0. 0. 0. 0. 0.
 INACTIVE TIME 0. 0. 0. 0. 0.

 INTO WAIT 272
 OUT OF WAIT 272
 # WAITING 0. 0. 0. 0. 1.000
 WAIT TIME .342 .331 .000 .997

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

TOTAL
 RESOURCE NUMBER CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...
 HQ 1.000 17512.166 22998.436 14.274 64207.274

INTO IDLE 203
 OUT OF IDLE 202
 # IDLE .998 .047 0. 1.000
 IDLE TIME 17512.166 22998.436 14.274 64207.274

 INTO BUSY 202
 OUT OF BUSY 202
 # BUSY 0. .002 .047 0. 1.000
 BUSY TIME 40.249 33.661 11.250 60.993

INTO INACT. 0
 OUT OF INACT. 0
 # INACTIVE 0. 0. 0. 0. 0.
 INACTIVE TIME 0. 0. 0. 0. 0.

INTO WAIT 202
 OUT OF WAIT 202
 # WAITING 0. 0. 0. 0. 1.000
 WAIT TIME .430 .375 .000 .993

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

TOTAL
 RESOURCE NUMBER CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...

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=====

L3
 INTO IDLE 85
 OUT OF IDLE 84
 # IDLE 1.000 1.000 0. 0. 1.000
 IDLE TIME 42056.537 80323.981 .003 433207.211

INTO BUSY 84
 OUT OF BUSY 84
 # BUSY 0. 0. 0. 0. 1.000
 BUSY TIME .370 .313 .003 .966

INTO INACT. 0
 OUT OF INACT. 0
 # INACTIVE 0. 0. 0. 0. 0.
 INACTIVE TIME 0. 0. 0. 0.

INTO WAIT 84
 OUT OF WAIT 84
 # WAITING 0. 0. 0. 0. 1.000
 WAIT TIME .370 .313 .003 .966

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

=====

RESOURCE TOTAL
=====

INTO IDLE 815
 OUT OF IDLE 814
 # IDLE 1.000 .982 .133 0. 1.000
 IDLE TIME 4273.985 10525.150 0. 57398.700

INTO BUSY 814
 OUT OF BUSY 814
 # BUSY 0. 0. .133 0. 1.000
 BUSY TIME 80.297 .290 80.000 80.995

INTO INACT. 0
 OUT OF INACT. 0
 # INACTIVE 0. 0. 0. 0. 0.
 INACTIVE TIME 0. 0. 0. 0.

INTO WAIT 814
 OUT OF WAIT 814

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 # WAITING
 WAIT TIME

0. .007 .081 2.000
 29.133 38.414 0. 111.140

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE TOTAL
 # CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...
 =====

SWC INTO IDLE 781
 OUT OF IDLE 780 1.000 .983 .131 0. 1.000
 # IDLE .028 56916.874
 IDLE TIME

INTO BUSY 780
 OUT OF BUSY 780 0. .017 .131 0. 1.000
 # BUSY .339 80.999
 BUSY TIME

INTO INACT. 0
 OUT OF INACT. 0 0. 0. 0. 0. 0.
 # INACTIVE
 INACTIVE TIME

INTO WAIT 780
 OUT OF WAIT 780 0. .000 .009 0. 1.000
 # WAITING .751 5.056 0. 76.678
 WAIT TIME

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE TOTAL
 # CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...
 =====

SW3 INTO IDLE 663
 OUT OF IDLE 662 1.000 .985 .120 0. 1.000
 # IDLE .055 57913.254
 IDLE TIME

INTO BUSY 662

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OUT OF BUSY	662	0.	.015	.120	0.	1.000
# BUSY			80.297	.308	80.000	80.996
BUSY TIME						
INTO INACT.	0					
OUT OF INACT.	0	0.	0.	0.	0.	0.
# INACTIVE						
INACTIVE TIME						
INTO WAIT	662					
OUT OF WAIT	662	0.	.000	.006	0.	1.000
# WAITING			.479	3.305	.000	60.930
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

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SIMULATION TIME = 3600000.00000 UNITS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
CHQCD.OH						
USEFUL TIME	0	0.	0.	0.	0.	0.
DELAY TIME	0	0.	0.	0.	0.	0.

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
CHQCD.OH						
USEFUL TIME	0	0.	0.	0.	0.	0.
DELAY TIME	0	0.	0.	0.	0.	0.

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
CS OH						
USEFUL TIME	898	.400	.345	.000	.998	.010
DELAY TIME	898	0.	0.	0.	0.	0.

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ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
DUPRYACT						
USEFUL TIME	0	0.	0.	0.	0.	0.
DELAY TIME	0	0.	0.	0.	0.	0.

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
FORPAT						
USEFUL TIME	272	2.342	.331	2.000	2.997	.018
DELAY TIME	272	0.	0.	0.	0.	0.

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
HQ.OH						
USEFUL TIME	0	0.	0.	0.	0.	0.
DELAY TIME	0	0.	0.	0.	0.	0.

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL

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=====									
LATENCY									
USEFUL TIME	272	14.994	0.570	.100	30.551	.113			
DELAY TIME	272	0.	0.	0.	0.	0.			
=====									
TOTAL									
SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME	OF TOTAL			
=====									
OVERHEAD									
USEFUL TIME	0	0.	0.	0.	0.	0.			
DELAY TIME	0	0.	0.	0.	0.	0.			
=====									
TOTAL									
SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME	OF TOTAL			
=====									
ROUTE.OH									
USEFUL TIME	2966	00.205	.316	00.000	00.999	6.615			
DELAY TIME	2966	0.	0.	0.	0.	0.			
=====									
TOTAL									
SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME	OF TOTAL			
=====									
ACTION									
USEFUL TIME	272	29.400	17.716	.275	60.439	.222			
DELAY TIME	272	0.	0.	0.	0.	0.			
=====									
TOTAL									
SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME	OF TOTAL			
=====									
UPDATE									
USEFUL TIME	354	0.023	5.203	.102	12.224	.079			
DELAY TIME	354	0.	0.	0.	0.	0.			
=====									
TOTAL									
SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME	OF TOTAL			
=====									
ACTION									
USEFUL TIME	272	.841	.325	.500	1.495	.006			
DELAY TIME	272	0.	0.	0.	0.	0.			
=====									
TOTAL									
SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME	OF TOTAL			
=====									
ACTION									
USEFUL TIME	3230	443.643	424.070	01.200	1221.449	39.903			
DELAY TIME	3230	0.	0.	0.	0.	0.			
=====									

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SIMULATION TIME = 3600000.00000 UNITS

PROCESS REPORT

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
AB-DATA	110	0	0	0	0	0	0
PROCESS WAIT	0	0	0	0	0	0	0
RESOURCE WAIT	0	0	0	0	0	0	0
TOTAL # AUTO # CALL # OF # NOT # TIMES							
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND							
110	110	0	110	0	0	0	0

PROCESS DESCRIPTION
AIR BASE STATUS BROADCAST TO ALL OTHER NODES

COMPUT ENTRY	OPCODE	PAPM	PAPM	PAPM	CONTENT
110	START				NO
110	GIVEN	MSG			
110	PETURN	MSG			
110	CALL	REQ-I/O	NOWAIT	10	PROCESS REQUEST TO CMQ
110	GIVEN	CMQ-DATA	10	\$NOWAIT	
110		750	CMQ	MSG	
110	CALL	REQ-I/O	NOWAIT	10	PROCESS REQUEST TO HQ
110	GIVEN	HQ-DATA	10	\$NOWAIT	
110		750	HQ	MSG	
110	ASSIGN	\$CMQD			CURRENT NODE
110	CMQD				
110	COMPAPE	CMQD			TEST FOR CURRENT NODE
110		AE1			
59	CALL	REQ-I/O	NOWAIT	10	PROCESS REQUEST TO AE1
59	GIVEN	AE1-DATA	10	\$NOWAIT	
59		750	AE1	MSG	
59	BRANCH	END	100		BRANCH TO THE END
59	ENTRY				ENTRY FROM COMPAPE NODE
59	CALL	REQ-I/O	NOWAIT	10	PROCESS REQUEST TO AE2
59	GIVEN	AE2-DATA	10	\$NOWAIT	
59		750	AE2	MSG	
110	ENTRY				ENTRY FROM REQUEST TO AE1
110	END				
TOTAL					

PAGE 41
 PROCESS SAMPLES. SUM. MEAN. STD DEV. ... MINIMUM. ... MAXIMUM. ...
 AB-REQ
 TOTAL 230 572836.793 2490.603 412.836 2193.547 5749.134
 PROCESS WAIT 230 572836.793 2490.603 412.836 2193.547 5749.134
 RESOURCE WAIT 0 0. 0. 0. 0. 0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
 SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
 230 230 0 230 0 0

PROCESS DESCRIPTION
 AB-REQ AIRBASE REQUEST FOR PLANS REPORT FROM CHQ
 COUNT ENTRY OPCODE PAPH PAPH COMMENT
 230 START NO
 230 GIVEN MSG
 230 RETURN MSG
 230 CALL REQ-T/O WAIT 5 PROCESS REQUEST TO CHQ
 230 GIVEN PLAYS 5 SHAIT
 230 200 CHQ MSG
 230 END

PROCESS TOTAL
 SAMPLES. SUM. MEAN. STD DEV. ... MINIMUM. ... MAXIMUM. ...
 AEUPDATE
 TOTAL 116 80.468 .682 .341 .102 .899
 PROCESS WAIT 0 0. 0. 0. 0. 0.
 RESOURCE WAIT 0 0. 0. 0. 0. 0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
 SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
 116 0 116 116 0 0

ITEM CREATED RECEIVED SENT DESTR'D
 MSG 0 0 0 0
 PROCESS HOLDING TIME
 ITEM # SHPLS MEAN. MINIMUM. ... MAXIMUM. ... STD DEV. ...
 MSG 116 .68 .10 .90 .34

PROCESS DESCRIPTION

[illegible]

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
118	STADY			NO		
118	GIVEN		MSG			
118	PETUPN		MSG			
118	UPDATE		CONSTANT	0.1		TIME CONSUMED IN UPDATING
118	END					

TIME CONSUMED IN UPDATING

	TOTAL SAMPLES.	SUM.....	MEAN.....	STD DEV..	MINIMUM..	MAXIMUM...
PROCESS WAIT	3238	2.052E 06	633.603	845.030	01.200	3662.099
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	3238	616406.096	190.166	529.890	0	2996.099

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	SCHEDULE	SCHEDULE	COMPLETE	COMPLETE	SUSPEND.

ITEM	CREATED	RECEIVED	SENT	DESTROYED
MSG	0	0	0	0

ITEM	PROCESS WELDING TIME					STD DEV...
	#	SPLS	MEAN	MINIMUM..	MAXIMUM..	
1509	3230	633.60	61.20	3562.10	845.03	

PROCESS	DESCRIPTION
CHN10	FULL AND HALF DUPLEX CHANNEL LOGIC

COUNT	ENTRY	OPCODE	PAPH	PAPH	COMMENT
3239	START	ALL	NO		
3239	GIVEN	MSG			
3239	ASSIGN	MSG	CHMODE		SET INTERNAL NODE CURRENT
3238		%CHMODE			
3238	ASSIGN	MSG	THMODE		GET DESTINATION NODE (MSG)
3238		TO NODE			
3238	ASSIGN	%THMODE	TO NODE		SET NEXT NODE TO DEST N
3238		NXT NODE			
3238	ASSIGN	%CHANNEL	TO NODE		GET CHANNEL TO NEXT NODE
3238		CHANNEL			

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3239	ALLOC	CHANNEL	RATE		OBTAIN CHANNEL FOR X FER
3238	ASSIGN	VSPEED	LENGTH		WHAT IS RATE IN SEC/BYTE?
3237	ASSIGN	MSG	LENGTH		MESSAGE LENGTH IN BYTES
3236	EVAL	VM.DVHD	MULTIPLY		CALCULATE TRANSFER TIME
3235	XFER.DH	VSPEED	VLENGTH		DELAY DUE TO TRANSFER TIME
3234	ASSIGN	CONSTANT VM.DVHD			MESSAGE RESIDES IN NEXT
3233	ASSIGN	NAT.NODE	CHCODE		SET INTERNAL NODE REGISTER
3232	ASSIGN	INT.NODE			FREE UP CHANNEL AFTER XFER
3231	DEALLOC	CHANNEL			INDICATE INTERRUPT IN NEXT
3230	CALL	HANDLER NOWAIT	0		
3229	GIVEN	MSG			
3228	END				

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
CHQ-DATA							
PROCESS H'IT	118	1378.976	11.686	.286	11.253	11.999	
RESOURCE WAIT	0	0.	0.	0.	0.	0.	

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.

118 0 118 118 0 0

ITEM	CREATED	RECEIVED	SENT	DESTR'D
MSG	0	0	0	0

PROCESS	HOLDING	TIME
ITEM	# SPTS	MEAN
MSG	118	11.69
		11.25
		12.00
		.29

PROCESS DESCRIPTION
CHQ-DATA CHQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES

COURT ENTRY	OPCODE	PAPH	PARM	PAPH	COMMENT
118	START				NO
118	GIVEN	MSG			
118	RETURN	MSG			
118	ASSIGN	MSG	LENGTH		MAKE MSG-LENGTH = V.LENGTH

```

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116 V.LENGTH MULTIPLY EVALUATE MSG PROCESS TIME
116 V.TIME .015 V.LENGTH
116 UPDATE CONSTANT V.TIME PROCESSING TIME CONSUMED
116 END

TOTAL
SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM
=====
PROCESS 898 109808.313 122.281 179.386 .000 511.669
CONTROL 898 104140.941 115.970 139.729 .102 326.516
PROCESS WAIT 898 6027.206 6.712 18.110 .000 117.250
RESOURCE WAIT

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
898 0 898 898 0 0

ITEM CREATED RECEIVED SENT DESTROY
=====
MSG 0 0 0 0 626

PROCESS HOLDING TIME
# SHPLS MEAN MINIMUM MAXIMUM STD DEV
=====
MSG 1524 4.13 .00 117.25 14.24

PROCESS DESCRIPTION
=====
OPERATING SYSTEM : CONTEXT SWITCHING

COUNT ENTRY OPCODE PARAM PARAM COMMENT
=====
898 START ALL NO
898 GIVEN MSG
898 ASSIGN MSG CHOOSE CURRENT NODE IS CPU
898 CP
898 ALLOC CP
898 ASSIGN CP OSOVMD SIGNAL CURRENT CPU BUSY
898 M.OVMD MEAN CONTEXT SWITCH TIME
898 CS.CH CONSTANT M.OVMD DELAY CONTEXT SWITCH TIME
898 COMPARE MSG TYPE EQ IF RESPONSE- RESUME PARENT
898 $REQ REQUEST
272 ASSIGN MSG PTASK TASK TO RESUME IS IN MSG
272 TASK
272 RESUME TASK
272 BRANCH DESTROY 100 QUEUE UP TASK FOR NODE
626 REQUEST ENTRY END MESSAGE LIFE
ELSE-> CALL REQUESTED PROC

```


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SEEKTIME SEEKTIME SEEKTIME TIME FOR SEEK IS CONSUMED
 272 L-IFORH LATECY MAKE DISKLATENCY=LATETIME
 272 ASSIGN DISK
 272 LATENCY L-IFORH LATETIME TIME CONSUMED FOR LATENCY
 272 XFERP CC-INSTANT XFERP TRANSFER TIME CONSUMED
 272 DEALLOC DISK DISK RESOURCE DEALLOCATED
 272 END

TOTAL
 SAMPLES, SUM, MEAN, STD DEV, MINIMUM, MAXIMUM
 626 720615.520 1151.143 1254.203 80.000 5749.134
 626 50172.093 80.147 .276 80.000 80.996
 272 92.435 .340 .325 .000 .998

TOTAL # AUTO # CALL # OF # NOT # TIMES
 SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
 626 0 626 626 0 0

ITEM CREATED RECEIVED SENT DESTROY'D
 MSG 0 0 0 0

PROCESS HOLDING TIME
 # SMPLE MEAN, MINIMUM, MAXIMUM, STD DEV
 626 .15 0. 1.00 .28

PROCESS DESCRIPTION
 OPERATING SYSTEM: EXECUTIVE SERVICE REQUEST (CALL)

CONVIT ENTRY	OPCODE	PAPH	PAPH	PAPH	COMMENT
626	START	ALL	NO		
626	GIVEN	MSG			TASK= INSTANCE TO RESUME
626	ASSIGN	MSG	PTASK		OPTION= \$WAIT OF \$NOWAIT
626	ASSIGN	MSG	RESPONSE		
626	CALL	ROUTER	WAIT	0	INITIATE ROUTING TO DEST.
626	GIVEN	MSG			SHOULD PARENT SUSPEND ?
626	COMPARE	RESP.OPT	EQ		PROCESS CALLED WAIT
626	\$NOWAIT		END		CONTINUE OR RESUME POINT
272	SUSPEND				
626	ENTRY				

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626

END

PROCESS TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
HQ-DATA
TOTAL 118 1390.860 11.702 .400 11.250 12.224
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
118 0 118 118 0 0

ITEM CREATED RECEIVED SENT DESTR'D
MSG 0 0 0 0

PROCESS HOLDING TIME
ITEM # SMPLS MEAN. MINIMUM. MAXIMUM. STD DEV.
MSG 118 11.70 11.25 12.22 .40

PROCESS DESCRIPTION
HQ-DATA HQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES
COMMIT ENTRY OPCODE PARM PARM PARM COMMENT
118 START NO
118 GIVEN MSG
118 SETUP MSG
118 ASSIGN MSG
118 V. LENGTH
118 EVAL V. TIME MULTIPLY
118 UPDATE CONSTANT V. TIME
118 END
MAKE MSG-LENGTH = V. LENGTH
EVALUATE MSG PROCESS TIME
PROCESSING TIME CONSUMED

PROCESS TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
HQ-REQ
TOTAL 42 119456.726 2844.208 387.466 2693.211 4578.787
PROCESS WAIT 42 119456.726 2844.208 387.466 2693.211 4578.787
RESOURCE WAIT 0 0. 0. 0. 0. 0.
TOTAL # # AUTO # CALL # OF # NOT # TIMES

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 SCHEDULE SCHEDULE COMPLETE COMPLETE SCHEDULE SCHEDULE
 42 42 0 42 0 0

PROCESS DESCRIPTION
 HQ-REQ HQ REQUEST FOR STATUS DISPLAY FROM CHQ
 COUNT ENTRY OPCODE PARM PARM PARM COMMENT
 42 START L3 NO
 42 GIVEN MSG
 42 RETURN MSG
 42 CALL REQ-I/O WAIT % MOVES I/O REQUEST TO CHQ
 42 GIVEN PLAYS 4 WAIT
 42 200 CHQ MSG
 42 END

TOTAL
 SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM
 TOTAL 3238 212213.934 65.539 46.269 .000 191.140
 PROCESS WAIT 0 0.0 0.0 0.0 0.0
 RESOURCE WAIT 2340 24649.986 10.534 26.636 0.0 111.140

TOTAL # AUTO # CALL # OF # NOT # TIMES
 SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SCHEDULE SCHEDULE

ITEM CREATED RECEIVED SENT DESTROY
 MSG 0 0 0 0 0

PROCESS HOLDING TIME
 # SMPLE MEAN MINIMUM MAXIMUM STD DEV
 MSG 3238 65.54 .00 191.14 46.27

PROCESS DESCRIPTION
 OPERATING SYSTEM : INTERRUPT HANDLING AND ROUTING

COUNT ENTRY OPCODE PARM PARM PARM COMMENT
 3239 START ALL NO
 3238 GIVEN MSG
 3239 ASSIGN MSG CHCODE INDICATE CURRENT NODE CPU

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```

3236 CP COMPARE MSG EQ CHMODE EQ IS MSG AT DESTINATION ?
3237 MSG TMODE CONTROL
3238 ASSIGN CP M.OVHD NETINSTR MONITOR OVERHEAD FOR PLOT
3239 CP M.OVHD
3240 ALLOC CP ROUTE.OH CONSTANT M.OVHD OBTAIN CP-HANDLE INTERRUPT
3241 DEALLOC CP CHLIO NOWAIT 0 DELAY FOR ROUTING
3242 CALL GIVEN MSG END 100 RELEASE CPU TO OTHERS
3243 BRANCH ENTRY MSG END 100 FORWARD MESSAGE WITH I/O
3244 CONTROL COMPARE MSG $RESP EQ IF MESSAGE AT DESTINATION
3245 ASSIGN MSG PRIORITY HFCNTRL IF RESPONSE-UP PRIORITY
3246 HPCNTRL ENTRY CONTROL NOWAIT PRIORITY SET MESSAGE PRIORITY
3247 CALL CALL CONTROL NOWAIT PRIORITY=0 IF UNDEFINED
3248 GIVEN ENTRY MSG PRIORITY CONTEXT SWITCH MESSAGE
3249 END

```

```

TOTAL
PROCESS SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM
-----
PLANS
TOTAL 272 12666.005 46.566 19.646 6.115 89.551
PROCESS WAIT 272 12122.005 44.566 19.646 4.115 87.551
RESOURCE WAIT 0 0 0 0 0 0

```

```

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND
-----
272 0 272 272 0 0

```

```

ITEM CREATED RECEIVED SENT DESTROYED
-----
MSG 0 0 0 0

```

```

PROCESS HOLDING TIME
ITEM # SHPLS MEAN MINIMUM MAXIMUM STD DEV
-----
MSG 272 46.57 6.11 89.55 19.65

```

```

PROCESS DESCRIPTION
-----
PLANS REQUEST FOR PLANS FROM CHQ

```

```

COURT ENTRY OFCODE PARM PARM COMMENT

```

```

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=====
272 START CHC NO
272 GIVEN MSG
272 RETURN MSG
272 ASSIGN MSG
272 V.LENGTH
272 V.TIME MULTIPLY
272 .01 V.LENGTH
272 FORMAT CONSTANT V.TIME
272 CALL DISK OP WAIT 10
272 GIVEN 10000 DKL
272 ASSIGN 10000
272 V.LENGTH
272 END
=====
MAKE MSG LENGTH = V.LENGTH
EVALUATE MSG PROCESS TIME
TIME USED TO FORMAT PLANS
CALLING PROCESS DISK.OP
AUGMENT MSG TO 10000

TOTAL
SAMPLES, SUM, MEAN, STD DEV, MINIMUM, MAXIMUM,
=====
PEV-I/O
TOTAL 626 720615.520 1151.143 1254.203 80.000 5749.134
PROCESS WAIT 626 720615.520 1151.143 1254.203 80.000 5749.134
RESOURCE WAIT 0 0. 0. 0. 0. 0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
ITEM CREATED RECEIVED SENT DESTROYED
=====
MSG 626 0 626 626 0 0

PROCESS HOLDING TIME
ITEM # SMPLS MEAN, MINIMUM, MAXIMUM, STD DEV,
=====
MSG 626 .15 0. 1.00 .28

PROCESS DESCRIPTION
=====
REQ-I/O GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O

COUNT ENTRY OFCODE PARM PARM COMMENT
=====
626 START ALL NO
626 GIVEN PROCESS, PRIORITY RESP.OPT
626 MSG.LENGTH TO.NODE MSG
626 CREATE MSG
626 ASSIGN $CODE CHODE
626 MSG
=====
CREATE MESSAGE DATA TO RTE
INDICATE CURRENT NODE

```

PROCESS	TOTAL SAMPLES	SUM	MEAN	\$TO DEV	MINIMUM	MAXIMUM
ROUTER	626	50172.093	80.147	.276	80.000	80.996
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # SCHEDULE	# AUTO SCHEDULE	# CALL SCHEDULE	# OF COMPLETE	# NOT COMPLETE	# TIMES SUSPEND
626	0	626	626	0	0

ITEM	CREATED	RECEIVED SENT	DEST'D
M56	0	0	0

PROCESS	HOLDING TIME	8 SMPLS MEAN	MINIMUM	MAXIMUM	STD DEV
M53	626	80.15	80.00	81.00	.28

DESCRIPTION

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ROUTER

OPERATING SYSTEM : INTERRUPT HANDLING AND ROUTING

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
626	START	ALL	NO		
626	GIVEN	MSG			INDICATE CURRENT NODE CPU
626	ASSIGN	MSG			
626	CP				
626	COMPARE	MSG			IS MSG AT DESTINATION ?
626	MSG				
626	ASSIGN	CP			MONITOR OVERHEAD FOR PLOT
626	M.OVHD				
626	ROUTE.ON	CONSTANT	M.OVHD		DELAY FOR ROUTING
626	CALL	CHLIO	NON-IT	0	FORWARD MESSAGE WITH I/O
626	GIVEN	MSG			
626	BRANCH	END	100		
0	CONTROL	ENTRY			MESSAGE AT DESTINATION
0	COMPARE	MSG			IF RESPONSE-UP PRIORITY
0	ASSIGN	MSG			SET MESSAGE PRIORITY
0	HPCONTROL	ENTRY			PRIORITY=0 IF UNDEFINED
0	CALL	CONTROL	NOWAIT		PRIORITY CONTEXT SWITCH MESSAGE
0	GIVEN	MSG			
626	END	ENTRY			
626	END				

PROCESS TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.

TRACE
TOTAL 1 0. 0. 0. 0. 0.
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

1 1 0 1 0 0

PROCESS DESCRIPTION

TRACE TUPH ON TRACE OUTPUT

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
1	START	ALL	NO		
1	COMPARE	V-TRACE			EQ TEST IF FLAG SET FOR TRACE
1					NOTRACE

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0 TRACE ON
1 NOTRACE ENTRY
1 END

APPENDIX D

TEST 5 Statistics - Results Verification for
TESTDBE.DBF

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SIMULATION TIME = 10000.00000 UNITS

CONSTANT REPORT

	CURRENT
CONSTANT VALUE	
C100	100.000
C5	5.000
C50	50.000

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SIMULATION TIME = 10000.00000 UNITS

VARIABLE REPORT

NUMERIC VARIABLES...

TOTAL		VALUE			
VARIABLE	SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM... MAXIMUM...
VAGS	2	10.000	10.000	0.	10.000 10.000
VADD	2	10.000	10.000	0.	10.000 10.000
VAPCOS	89	2.000	2.000	.000	2.000 2.000
VAPCSIN	89	1.142	1.142	.000	1.142 1.142
VAPCTAN	89	-1.142	-1.142	.000	-1.142 -1.142
VEETA	89	.829	.778	.990	10.000 .427
VETH	89	100.000	98.882	10.488	.500 100.000
VCS	89	-1.416	-1.416	.000	-1.416 -1.416
VCTADLE	8	85.000	50.000	32.977	0. 100.000
VGV	2	10.000	10.000	0.	10.000 10.000
VETASLE	8	80.000	47.500	33.872	0. 100.000
VEPLANG	89	9.710	11.214	10.256	3.937 100.000
VEPP	89	3.343	6.720	9.029	.058 53.791
VEPPE	89	100.000	100.000	.000	100.000 100.000
VENPLO	89	100.000	100.000	.000	100.000 100.000
VGNMA	89	9.559	9.776	4.187	2.462 21.478
VLOCE	89	4.605	4.605	.000	4.605 4.605
VLOCH	89	18.377	10.271	5.588	2.650 36.699
VLODLO	89	2.000	2.000	.000	2.000 2.000
VHJLT	2	10.000	10.000	0.	10.000 10.000
VHESYQ	197	2.000	1.980	.200	2.000 2.000
VHEDLEQ	197	0.	.010	.142	0. 2.000
VHCEAL	89	15.818	10.415	4.679	-3.137 22.386
VHMITO	197	104.000	96.711	56.156	0. 194.000
VFOISSON	89	7.000	11.371	10.998	1.000 110.000
VECLER	2	10.000	10.000	.000	10.000 10.000
VPIH	89	.660	.544	.253	.009 .993
VSIH	89	.909	.909	.000	.909 .909
VSCOT	2	10.000	10.000	0.	10.000 10.000
VSD	2	10.000	10.000	0.	10.000 10.000
VTAH	89	-2.185	-2.185	.000	-2.185 -2.185
VUNIFORM	89	9.973	10.321	2.695	5.232 14.917
VKEIBULL	1	10.000	10.000	0.	10.000 10.000

NON-NUMERIC VARIABLES...

CURRENT CURRENT

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VARIABLE TYPE VALUE
=====

SIMULATION TIME = 10000.00000 UNITS

RESOURCE REPORT

[illegible]

[illegible]

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SIMULATION TIME = 10000.00000 UNITS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
EVALUATE	359	98.009	18.488	10.000	205.866	351.854
USEFUL TIME	359	0.	0.	0.	0.	0.
DELAY TIME						

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
PROCESS	577	100.146	64.527	0.	438.299	577.845
USEFUL TIME	577	0.	0.	0.	0.	0.
DELAY TIME						

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SIMULATION TIME = 10000.00000 UNITS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM.	MEAN	STD DEV	MINIMUM	MAXIMUM
OFDINIT	TOTAL	68	.077	.001	0.	.004
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

88 0 88 88 0 0

PROCESS DESCRIPTION
OFD INITIATOR FOR 6 THROUGH 10

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
88	START			100	
89	ASSIGN		6		LOOP COUNTER AND TBL INDEX
89					CYCLE FOR ALL OFDS
508	NEXT				
508	ENTRY				
508	COMPARE		10		INDEX INTO ALPHA TABLE
508	EVAL				
440					
440	CALL				INITIATE OFD INDEX COUNTER
440	EVAL				INCREMENT LOOP COUNTER
440					
440	BRANCH			100	
89	END				
89	END				

PROCESS	TOTAL SAMPLES	SUM.	MEAN	STD DEV	MINIMUM	MAXIMUM
OFD1	TOTAL	84	8846.327	105.313	98.964	438.299
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

=====

09 00 0 04 4 0

=====

PROCESS DESCRIPTION

=====

OF01 TEST EXPONENTIAL DISTRIBUTION AND COMPARE

=====

COBIT	ENTRY	OFFCODE	PARM	PARM	PARM	COMMENT
09	STOPT					
08	CALL	OFDINIT	NOWAIT	0		INITIATE OFDS 6-10
05	PROCESS	EXPONENT	100.0			TEST EXPONENTIAL ACTIO
04	ASSIGN	1.0				
04		LOCAL1				
04	ASSIGN	2.0				
04		LOCAL2				
04	ASSIGN	3.0				
04		LOCAL3				
04	TESTEQ	ENTRY				TEST COMPARE EQ
04	COMPARE	LOCAL1			EQ	
04		LOCAL2			EQTEST	
04	BRANCH	EQTEST	100			TEST FALL THRU
04	ENTRY					
04	COMPARE	LOCAL3			EQ	
04		LOCAL3			TESTINE	
04	BRANCH	TESTINE	100			TEST FALL THRU
04	ENTRY					TEST COMPARE NE
04	COMPARE	LOCAL3			NE	
04		LOCAL3			NETEST	
04	BRANCH	NETEST	100			TEST FALL THRU
04	ENTRY					
04	COMPARE	LOCAL1			NE	
04		LOCAL2			TESTLT	
04	BRANCH	TESTLT	100			TEST FALL THRU
04	ENTRY					TEST COMPARE LT
04	COMPARE	LOCAL3			LT	
04		LOCAL1			LTTEST	
04	BRANCH	LTTEST	100			TEST FALL THRU
04	ENTRY					
04	COMPARE	LOCAL1			LT	
04		LOCAL3			TESTGT	
04	BRANCH	TESTGT	100			TEST FALL THRU
04	ENTRY					TEST COMPARE GT
04	COMPARE	LOCAL1			GT	
04		LOCAL2			GTTEST	
04	BRANCH	GTTEST	100			TEST FALL THRU
04	ENTRY					
04	COMPARE	LOCAL2			GT	
04		LOCAL1			TESTLE	

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PROCESS	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	TEST COMPARE LE
0	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	TEST COMPARE LE
84	ENTRY	ENTRY	LOCAL3		LE	
84	COMPARE	COMPARE	LOCAL1		LETEST1	
84	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	
84	ENTRY	ENTRY	LOCAL2		LE	
84	COMPARE	COMPARE	LOCAL2		LETEST2	
84	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	
84	ENTRY	ENTRY	LOCAL1		LE	
84	COMPARE	COMPARE	LOCAL3		TESTGE	
84	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	TEST COMPARE GE
84	ENTRY	ENTRY	LOCAL1		GE	
84	COMPARE	COMPARE	LOCAL3		GETEST1	
84	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	
84	ENTRY	ENTRY	LOCAL2		GE	
84	COMPARE	COMPARE	LOCAL2		GETEST2	
84	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	
84	ENTRY	ENTRY	LOCAL3		GE	
84	COMPARE	COMPARE	LOCAL1		TESTEND	
84	TESTILE	BRANCH	TESTILE	100	TEST FALL THRU	END OF COMPARE TESTING
84	ENTRY	ENTRY	TESTEND			
84	END					

PROCESS	DESCRIPTION	TEST INTERVAL SCHEDULE AND EVAL TRIG FUNCTIONS
0	TEST INTERVAL SCHEDULE AND EVAL TRIG FUNCTIONS	
88	START	
88	EVAL	
88	VLOG10	
88	LOG10	

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PROCESS	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
89	100.0					
89	VEXP10	POWER				
89	10.0	VLOG10				
89	VLOGF	LOGE				
89	100.0					
89	VEXP10	POWER				
89	2.710281	VLOGE				
89	VSIH	SINE				
89	2					
89	VARCSIN	ARCSINE				
89	VSIH					
89	VCOS	COSINE				
89	2					
89	VAPCOS	ARCSINE				
89	VCOS					
89	VTAN	TANGENT				
89	2					
89	VARCTAN	ARCTAN				
89	VTAN					
89	END					

PROCESS	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
OFD11	TOTAL	196 508849.689	2569.948	1418.633	100.000	4920.950
	PROCESS WAIT	0	0	0	0	0
	RESOURCE WAIT	200 498850.612	2494.253	1432.089	0	4900.461

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.

396 0 396 198 198 0

PROCESS DESCRIPTION
OFD11 TEST ALLOCATE & DEALLOCATE RESOURCE

COUNT	ENTRY	OCODE	PAPM	PAPM	PAPM	CONTENT
396	START					
396	ALLOC	RES1				TEST ALLOCATE
200	PROCESS	CONSTANT 100.0				
198	DEALLOC	RES1				TEST DEALLOCATE
198	END					

PROCESS	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
	TOTAL					

TOTAL	97	10006.439	103.159	75.687	10.643	384.404
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

[illegible]

99 99 0 97 2 0

PROCESS	DESCRIPTION
OPD2	TEST LOGICOMPL DISTRIBUTION AND ASSIGN

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	000000	000000				
1	000001	000000				
1	000002	000000				
1	000003	000000				
1	000004	000000				
1	000005	000000				
1	000006	000000				
1	000007	000000				
1	000008	000000				
1	000009	000000				
1	000010	000000				
1	000011	000000				
1	000012	000000				
1	000013	000000				
1	000014	000000				
1	000015	000000				
1	000016	000000				
1	000017	000000				
1	000018	000000				
1	000019	000000				
1	000020	000000				
1	000021	000000				
1	000022	000000				
1	000023	000000				
1	000024	000000				
1	000025	000000				
1	000026	000000				
1	000027	000000				
1	000028	000000				
1	000029	000000				
1	000030	000000				
1	000031	000000				
1	000032	000000				
1	000033	000000				
1	000034	000000				
1	000035	000000				
1	000036	000000				
1	000037	000000				
1	000038	000000				
1	000039	000000				
1	000040	000000				
1	000041	000000				
1	000042	000000				
1	000043	000000				
1	000044	000000				
1	000045	000000				
1	000046	000000				
1	000047	000000				
1	000048	000000				
1	000049	000000				
1	000050	000000				
1	000051	000000				
1	000052	000000				
1	000053	000000				
1	000054	000000				
1	000055	000000				
1	000056	000000				
1	000057	000000				
1	000058	000000				
1	000059	000000				
1	000060	000000				
1	000061	000000				
1	000062	000000				
1	000063	000000				
1	000064	000000				
1	000065	000000				
1	000066	000000				
1	000067	000000				
1	000068	000000				
1	000069	000000				
1	000070	000000				
1	000071	000000				
1	000072	000000				
1	000073	000000				
1	000074	000000				
1	000075	000000				
1	000076	000000				
1	000077	000000				
1	000078	000000				
1	000079	000000				
1	000080	000000				
1	000081	000000				
1						

[illegible]

	SAMPLES	TOTAL	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
PROCESS	1	1	1	1	0	1	1

TOTAL	100	8678.027	86.780	83.669	0.	347.274
PROCESS N°IT	0	0.	0.	0.	0.	0.
RESOURCE N°IT	0	0.	0.	0.	0.	0.

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	SCHEDULE	SCHEDULE	COMPLETE	COMPLETE	SUSPEND.

130	100	0	100	0	0
130	100	0	100	0	0

PROCESS	DESCRIPTION
1.00	1.00
2.00	2.00
3.00	3.00
4.00	4.00
5.00	5.00
6.00	6.00
7.00	7.00
8.00	8.00
9.00	9.00
10.00	10.00
11.00	11.00
12.00	12.00
13.00	13.00
14.00	14.00
15.00	15.00
16.00	16.00
17.00	17.00
18.00	18.00
19.00	19.00
20.00	20.00
21.00	21.00
22.00	22.00
23.00	23.00
24.00	24.00
25.00	25.00
26.00	26.00
27.00	27.00
28.00	28.00
29.00	29.00
30.00	30.00
31.00	31.00
32.00	32.00
33.00	33.00
34.00	34.00
35.00	35.00
36.00	36.00
37.00	37.00
38.00	38.00
39.00	39.00
40.00	40.00
41.00	41.00
42.00	42.00
43.00	43.00
44.00	44.00
45.00	45.00
46.00	46.00
47.00	47.00
48.00	48.00
49.00	49.00
50.00	50.00
51.00	51.00
52.00	52.00
53.00	53.00
54.00	54.00
55.00	55.00
56.00	56.00
57.00	57.00
58.00	58.00
59.00	59.00
60.00	60.00
61.00	61.00
62.00	62.00
63.00	63.00
64.00	64.00
65.00	65.00
66.00	66.00
67.00	67.00
68.00	68.00
69.00	69.00
70.00	70.00
71.00	71.00
72.00	72.00
73.00	73.00
74.00	74.00
75.00	75.00
76.00	76.00
77.00	77.00
78.00	78.00
79.00	79.00
80.00	80.00
81.00	81.00
82.00	82.00
83.00	83.00
84.00	84.00
85.00	85.00
86.00	86.00
87.00	87.00
88.00	88.00
89.00	89.00
90.00	90.00
91.00	91.00
92.00	92.00
93.00	93.00
94.00	94.00
95.00	95.00
96.00	96.00
97.00	97.00
98.00	98.00
99.00	99.00
100.00	100.00

```

=====
TEST NORMAL DISTRIBUTION
=====
COUNT ENTRY  OPCODE  PARM  PARM  COMMENT
=====
100  START
100  PROCESS  NORMAL  100.0  100.0
100  END
=====

```

```

=====
TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
=====
TOTAL 98 10453.613 106.670 55.230 .175 199.974
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.
=====
TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
99 99 0 98 1 0
=====

```

```

=====
PROCESS DESCRIPTION
=====
OFD4 TEST UNIFORM DISTRIBUTION
=====
COUNT ENTRY  OPCODE  PARM  PARM  COMMENT
=====
99  START
99  PROCESS  UNIFORM  100.00  100.00
99  END
=====

```

```

=====
TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
=====
TOTAL 94 9265.262 98.567 10.371 78.420 122.442
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.
=====
TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
95 95 0 94 1 0
=====

```

```

=====
PROCESS DESCRIPTION
=====
OFD5 TEST EPLANG DISTRIBUTION
=====

```

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COUNT ENTRY OFCODE PARM PARM PARM COMMENT
=====

95 START
95 EVALUATE EPLANG 100.0 100.0 TEST
94 END
=====

TOTAL
SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
=====

OFD6
TOTAL 66 6557.561 99.507 1.218 95.302 101.497
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.
=====

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.
=====

PROCESS DESCRIPTION
=====

OFD7
TOTAL 86 8602.464 100.029 27.509 58.290 205.866
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.
=====

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.
=====

PROCESS DESCRIPTION
=====

OFD7
COUNT ENTRY OFCODE PARM PARM PARM COMMENT
=====

88 START
=====

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88
86

EVALUATE GAMMA 100.0 20. TEST

END

PROCESS

OFDS

TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
88	0	.077	.001	.001	0.	.004
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

88 0 88 88 0 0

PROCESS

OFDS

DESCRIPTION

TEST POISSON SCHEDULE AND EVAL DISTRIBUTIONS

COUNT	ENTRY	OPCODE	PARAM	PARAM	COMMENT
89	START				
88	EVAL	VRAN	RANDOM		
88	EVAL	VBIN	BINOMIAL		
89	EVAL	VBIN	100.0	10.0	
89	EVAL	VBETA	BETA		
89	EVAL	VBETA	10.0	5.0	
89	EVAL	VEPLANG	ERLANG		
89	EVAL	VEPLANG	10.0	5.0	
89	EVAL	VEXP	EXPONENT		
89	EVAL	VGAMMA	GAMMA		
89	EVAL	VGAMMA	10.0	5.0	
89	EVAL	VLOGN	LOGNORMAL		
89	EVAL	VLOGN	10.0	5.0	
89	EVAL	VNORMAL	NORMAL		
89	EVAL	VNORMAL	10.0	5.0	
89	EVAL	VPOISSON	POISSON		
89	EVAL	VPOISSON	10.0		
89	EVAL	VUNIFORM	UNIFORM		
89	EVAL	VUNIFORM	10.0	5.0	
89	EVAL	VWEIBULL	WEIBULL		
89	EVAL	VWEIBULL	10.0	5.0	
89	END				

PROCESS

TOTAL

SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.

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```

=====
OFD9
TOTAL      66  8600.073  100.001  .001  100.000  100.004
PROCESS WAIT 0      0.      0.      0.      0.
RESOURCE WAIT 0      0.      0.      0.      0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
65      0      88      86      2      0

```

PROCESS DESCRIPTION

```

=====
OFD9
TEST START SCHEDULE AND CONSTANT ACTION

```

COUNT ENTRY: OFCODE PARM PARM PARM COMMENT

```

=====
89 START
89 EVALUATE CONSTANT 100.00 TEST
86 END

```

TOTAL

```

=====
PROCESS SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM. ... MAXIMUM. ...
TIMECALL
TOTAL      1  160.000  160.000  0.  160.000  160.000
PROCESS WAIT 0      0.      0.      0.      0.
RESOURCE WAIT 0      0.      0.      0.      0.

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
1      1      0      1      0      0

```

PROCESS DESCRIPTION

```

=====
TIMECALL
TEST TIME CALL SCHEDULE AND EVAL ARITHMETIC/TABLE

```

COUNT ENTRY OFCODE PARM PARM PARM COMMENT

```

=====
1 START
1 EVAL VADD ADD
1 EVAL 20.5 -10.5
1 EVAL EVALUATE CONSTANT 100.0
1 EVAL VSUB SUBTRACT
1 EVAL 6.5 -3.5
1 EVAL EVALUATE CONSTANT VSUB
1 EVAL VMULT MULTIPLY
1 EVAL -2.5 -4.0

```

TEST

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```
1 EVALUATE CONSTANT VMULT
1 EVAL VDIV DIVIDE
1 -4.0 -0.40
1 EVALUATE CONSTANT VDIV
1 EVAL VPOWER POWER
1 3.142277 2.0
1 EVALUATE CONSTANT VPOWER
1 EVAL VSQRT SQRT
1 100.0
1 EVALUATE CONSTANT VSORT
1 EVAL VABS ABSOLUTE
1 -10.0
1 EVALUATE CONSTANT VABS
1 EVAL VTABLE TCON
1 -50
1 EVAL VTABLE TDIS
1 -50.0
1 EVAL VTABLE TCON
1 1050.0
1 EVAL VTABLE TDIS
1 1050.0
1 EVAL VTABLE TCON
1 150.0
1 EVAL VTABLE TDIS
1 150.0
1 EVAL VTABLE TCON
1 250.0
1 EVAL VTABLE TDIS
1 250.0
1 EVAL VTABLE TCON
1 500.0
1 EVAL VTABLE TDIS
1 500.0
1 EVAL VTABLE TCON
1 750.0
1 EVAL VTABLE TDIS
1 750.0
1 EVAL VTABLE TCON
1 850.0
1 EVAL VTABLE TDIS
1 850.0
1 END
```