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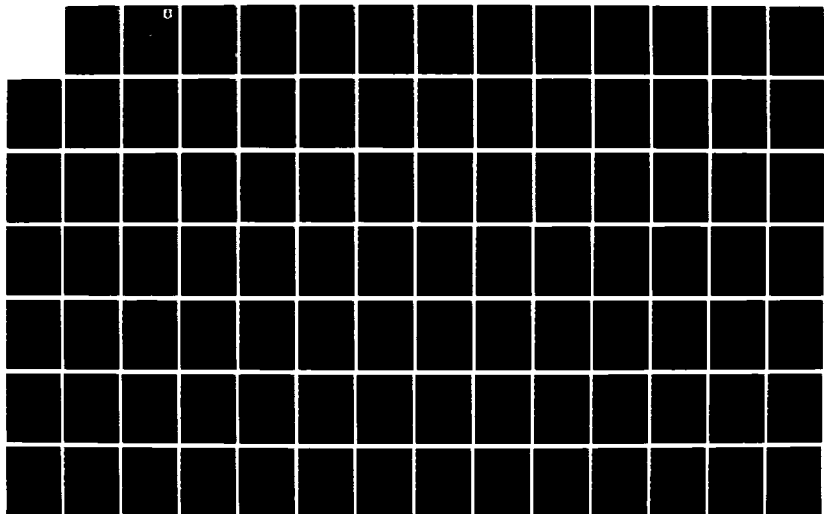
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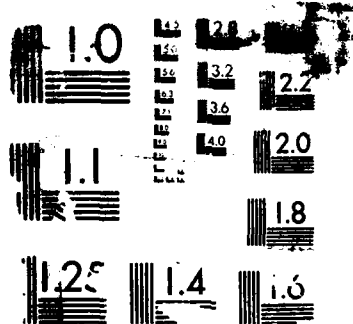
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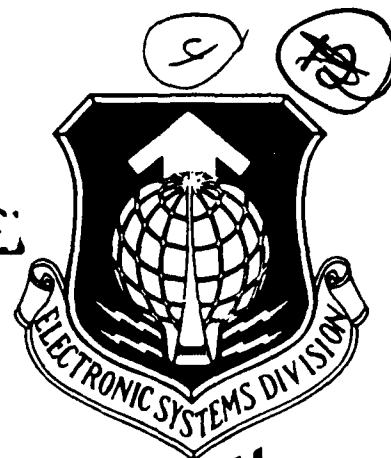
Automated Interactive Simulation Model (AISIM) VAX
Version 5.0 Acceptance Test Procedures

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29 April 1987

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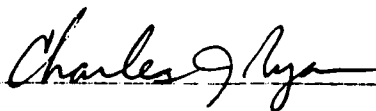
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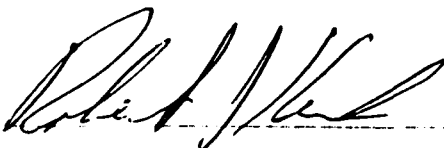


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This acceptance test procedures manual is used to perform acceptance testing of AISIM versions 4.2 and 5.0. This manual contains test procedures covering all functions of the AISIM system and a description of the expected results for each test.				
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Section 1

INTRODUCTION

1.1 Purpose

The purpose of this manual is to describe the procedures for conducting acceptance testing of the Automated Interactive Simulation Model (AISIM) versions 4.2 and 5.0 on a VAX 11/780. Provided with each test procedure is a description of the expected results of each test and room to record observed results.

1.2 Scope

This document contains test procedures for exercising all functions of the AISIM system. These procedures demonstrate conformance of AISIM to requirements specified in the AISIM Computer Program Product Specification.

1.3 Applicable Documents

The documents which will provide further information on the AISIM system are listed below.

- a. Hughes Aircraft Company, Automated Interactive Simulation Model (AISIM) User's Manual, F19628-86-C-0070, Fullerton, California, May 1987.
- b. Hughes Aircraft Company, Automated Interactive Simulation Model (AISIM) Computer Program Product Specification, F19628-86-C-0070, Fullerton, California, May 1987.

Section 2

TEST DESCRIPTIONS AND PROCEDURES

2.1 Test Descriptions

Acceptance testing of AISIM consists of verifying that all the components of the system function properly. Figure 2-1 shows all these components and their relationships to one another. The tests in this manual are composed of procedures to exercise the user interfaces of the AISIM functions and to exercise the simulation capabilities of AISIM. The following paragraphs describe each of these test procedures.

2.1.1 AISIM Executive Test Description

The AISIM executive controls a user's execution of the AISIM system. The executive controls a user's entry into each of the AISIM functions and provides the user with the ability to view simulation reports, generate listings of models, backup and restore data bases, and submit analysis runs in batch mode. Tests for invoking the various AISIM functions are not included in this section because these tests are included in the tests of the individual functions. Test procedure 2.4.1 is designed to show that the following capabilities are available:

- invoke AISIM
- list the parameters in effect for the current AISIM session (project, terminal type, etc.).
- backup a data base
- restore a data base
- change the parameters in effect for the current AISIM session
- delete temporary AISIM files
- edit simulation report files, trace reports and Library function buffers
- create a listing of a model
- display help information about AISIM commands and concepts

2.1.2 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 2.4.2 is designed to show that the following capabilities are available:

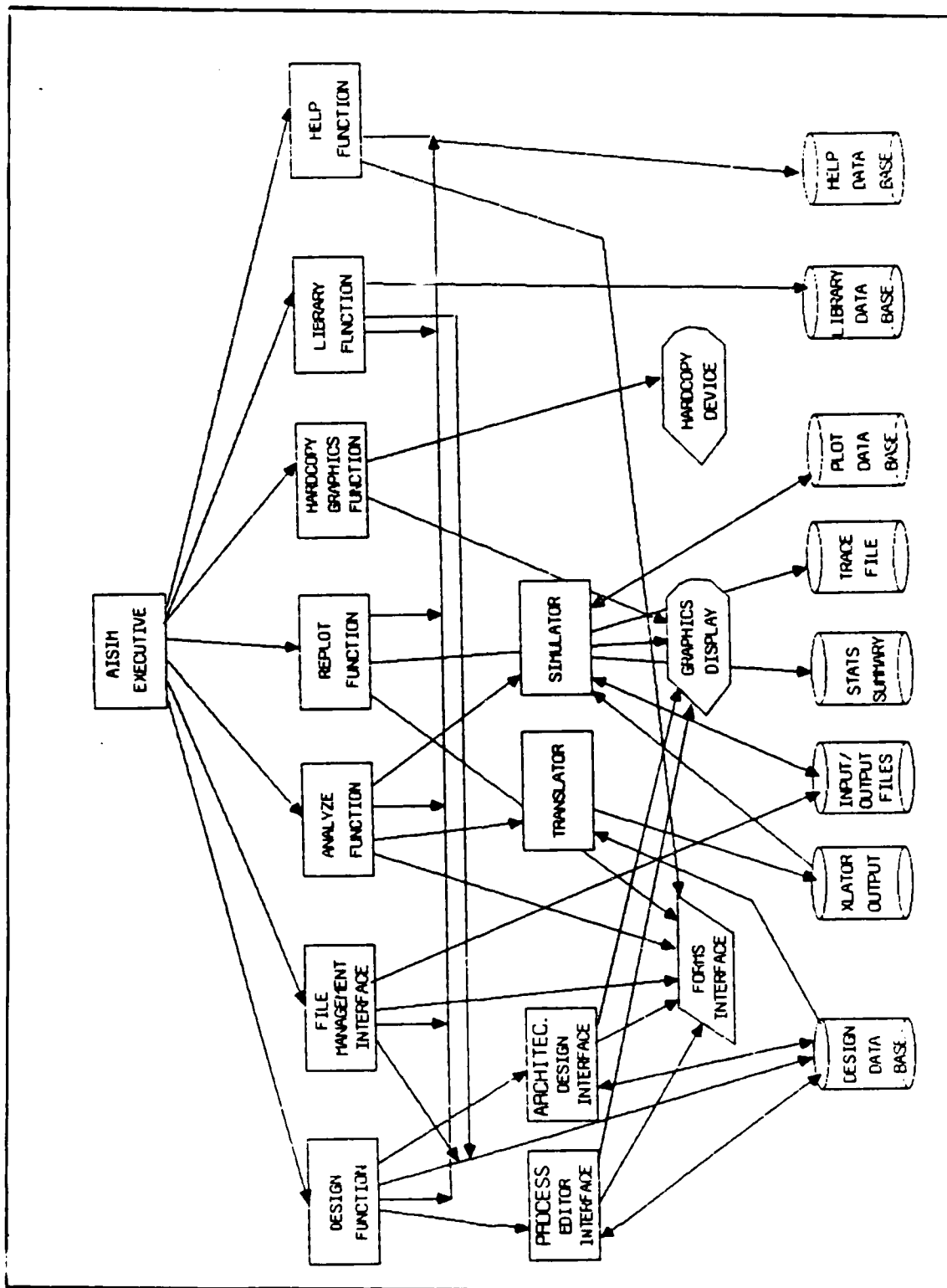


Figure 2-1. AISIM Overview

- Create entities
- Copy entities
- Modify entities
- List entities
- Delete entities
- Save model data bases
- Add Process Primitives
- Specify default time units to be placed in AISIM forms
- Change Process Primitives
- Delete Process Primitives
- Display various portions of Processes
- Create an architecture: place symbols and connections
- Attach attributes to Architecture Resources by defining attributes of symbols
- Move symbols and connections within an architecture
- Window in an architecture work space
- Create an LPT both manually and automatically
- Display help information about the Design User Interface commands

2.1.3 Analysis User Interface Test Description

The Analysis User Interface is used to run simulations of AISIM models. Test procedure 2.4.3 is intended to show that the following interface and simulation capabilities are available:

- Translate models
- List entities
- Display entity statistics
- Modify entity values
- Establish breakpoints
- Cancel breakpoints
- Define multiple plots with one command

- List current plot definitions
- Define single plots
- Display plots
- Save plot sets (definitions or data)
- List saved plot sets
- Retrieve saved plot definition sets
- Delete selected plot definitions
- Modify time units for display of simulation outputs
- Set infinite resources for specific Resource entities
- Add descriptive text to output report
- Verify display of small numbers in exponential notation in output report
- Run simulations

The AISIM simulator provides the capability to analyze models created through the Design Function. Test procedure 2.4.3 utilizes several preconstructed models to exercise various capabilities of the simulator. Figure 2-2 shows a cross reference of the test models and functional requirements of the simulator tested by each model.

	A	B	C	D	E	F
Random Number Seed					X	
Random Sampling by Variable Dist.				X	X	
Arithmetic Constructs	X			X	X	X
Parameter Passing	X	X		X	X	
Simulate for Multiple Periods				X		
Statistical Summary Precision				X		
Queue Manipulation			X	X		
Resource Logic		X	X	X		
Variable Time Units				X		

Figure 2-2. Simulator Testing - Functional Requirements Cross-Reference

Keywords

Message Routing

Process Triggering

Action Restart

File Input and Output

Batch Processing

A	B	C	D	E	F
	X		X		
			X		
X		X	X	X	
X					
	X				
		X			

Figure 2-2. Simulator Testing - Functional Requirements Cross-Reference (cont'd)

2.1.4 Replot User Interface Test Description

The Replot User Interface is used to plot selected simulation results. Test Procedure 2.4.4 is designed to verify that the following capabilities are available:

- List saved plot sets (definitions or data)
- Retrieve saved plot data sets
- Save plot data sets
- Display plots
- Delete saved plot sets
- Modify time units for display of plot data
- Display plot data from sets created with two different time units

2.1.5 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 2.4.5 is designed to verify that the following capabilities are available:

- Specify paper size on HP2631G printer and print size for TEK4695 copier (there is only one size of copy on the HP2623 terminal's printer)
- Plot individual Processes

- Plot all model Processes

2.1.6 Library User Interface Test Description

The Library User Interface is used to access the five 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, to merge parts of libraries into and out of a user's data base and to convert versions 3.0 and 4.0 data bases to version 5.0 compatible data bases. Test procedure 2.4.6 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 a model into a data base 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
- Convert a version 3.0 data base to version 5.0
- Convert a version 4.0 data base to version 5.0

2.1.7 File Management User Interface Test Description

The File Management User Interface is used to create and enter data into a file that can be read by the READ primitive. Test procedure 2.4.7 is designed to show that the following capabilities are available:

- Create files
- Add data to a file
- Delete data from a file
- Error check data entered into a file
- List data in a file
- Display help information about the File Management commands
- Modify data in a file that was not created through this interface

2.1.8 Help Editor Interface Test Description

The Help Editor Interface is used to add and modify information that is available to users via the HELP command. The user cannot change AISIM-provided information but can add and modify user-supplied information under the categories of notes, procedures, and guidelines. Test procedure 2.4.8 is designed to show that the following capabilities are available:

- display help information
- add help information
- modify help information
- delete help information
- list the names of available help topics

2.2 Test Equipment

Acceptance testing will be performed on AISIM versions 4.2V and 5.0V which are to be rehosted on the MITRE Corporation VAX 11/780 in the Bedford Computer Center. This testing will take place at the Hughes facility. The following equipment is required for this testing:

- 1 AISIM supported graphics terminal
- 1 AISIM supported printer connected to terminal
- connection to a computer system on which AISIM is hosted

2.3 Test Conditions

All input data will be entered by the tester in interactive mode. Some simulations will be run in batch mode. The specific inputs are listed in section 2.4. No other test conditions apply to this test plan.

2.4 Test Procedures

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

Since AISIM can be used from various terminals (HP2647A, HP2648A, HP2623, TEK4105 and VT100), the AISIM interfaces should be verified for any of these terminals which will be used for running AISIM. Designation of the terminal in use is made the first time a user invokes a function for a given AISIM session. The available terminal designations are the following:

- HP - HP2647A and HP2648A terminals
- HP23 - HP2623 terminals

TEK - Tektronix 4105 terminals
VT - VT100 terminals

All following test procedures are the same for all terminal types except where specifically noted. Any differences in expected results are also noted.

Throughout the acceptance tests, data is entered into AISIM forms. Figure 2-3 describes the function keys which are used to move through the forms on each terminal. Following is a description of the ways in which a user can move through a form. These movements correspond to the column headings in the figure.

UP - If the cursor is in a block of fields, such as Resource attributes, the cursor will move up to the field above it. If the cursor is in a single field or at the top of a block, the cursor will move to the end of the next field above it. If there are no fields above it, the cursor will wrap to the end of the last field in the form.

DOWN - If the cursor is in a block of fields, such as Resource attributes, the cursor will move down to the field below it. If the cursor is in a single field or at the bottom of a block, the cursor will move to the beginning of the next field below it. If there are no fields below it, the cursor will wrap to the beginning of the first field in the form.

LEFT - The cursor will move one position to the left in the current field. If the cursor is at the beginning of a field, it will move to the end of the previous field. If the cursor is at the top of the form, it will wrap to the end of the last field in the form.

RIGHT - The cursor will move one position to the right in the current field. If the cursor is at the end of a field, it will move to the beginning of the next field. If the cursor is at the end of the form, it will wrap to the beginning of the first field in the form.

ENTER - Exit the form and send the data to the forms processing portion of the AISIM system.

+FIELD - Move the cursor to the beginning of the next field in the form. If the cursor is at the end of the form, it will wrap to the top of the form.

-FIELD - Move the cursor to the end of the previous field in the form. If the cursor is at the top of the form, it will wrap to the end of the last field in the form.

	UP	DOWN	LEFT	RIGHT	ENTER	+FIELD	-FIELD
HP2647A	F1	F2	F3	F4	F5	<cr>	F6
HP2648A	F1	F2	F3	F4	F5	<cr>	F6
HP2623	F1	F2	F3	F4	F5	<cr>	F6
TEK4105	F1	F2	F3	F4	F5	<cr>	F6
VT100	↑	↓	<--	-->	PF1	<cr>	PF2

2.4.1 AISIM Executive Test Procedure

This test exercises the commands available from the AISIM READY level and the LIBRARY READY level. One command, the EDIT command, operates on files which have not yet been created by these test procedures. The tests are included in this section for consistency, but they cannot be performed until after the tests in section 2.4.3 and 2.4.6 have been performed. The tests in this section should be performed from directory [.AISIM.TEST42] or [.AISIM.TEST50] in the account where AISIM is hosted.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Initiate an AISIM session.		
AISIM	AISIM executive messages are displayed. AISIM READY and ">" prompt are displayed.	
2. List current parameters before any are defined.		
list	Current parameters are listed. Version is 4.2 or 5.0, terminal is undefined, project is undefined, and user is the user's id.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
3. Backup a design data base. backup p(testdbl)	Current parameters are listed. User is asked to continue or abort. User enters "yes". Data base is copied to testdbl.bck.	
4. Restore a design data base from backup. restore p(testdbl)	Current parameters are listed. User is asked to continue or abort. User enters "yes". Data base testdbl.bck is copied to testdbl.dbf.	
5. Change the parameters in effect for the current session. c p(testdba) t(vt) c t(tek) c p(testdbb)	Current parameters are displayed after each selection.	
6. Test Msgoff command. msgoff c p(testdba) t(hp) list	Current parameters are not displayed for CHANGE command. Parameters are verified with LIST command.	
7. Test Msgon command. msgon c p(testdbl) t("term")	Current parameters are displayed for CHANGE command. Replace "term" with designation for terminal currently being used.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
8. Delete temporary AISIM files delf p(testdbl)	Current parameters are listed. User is asked to continue or abort. User enters "yes". Working files for a project are deleted. There are none at this point in the test. This test can be repeated after tests 2.4.2 and 2.4.3, and verified with a "DIR" command.	
9. Edit simulation reports and trace file. edit p(testdbb) edit trace	There are no files at this time. Response informs user that file does not exist. This test can be performed after test 2.4.3 is completed. Use "quit" to exit the editor.	
10. Create a listing of a model. glist p(testdba)	Current parameters are listed. User is asked to continue or abort. User enters "yes". A listing of project testdba is created and printed.	
11. Display help information. help	A description of the AISIM READY level and a list of the valid commands is displayed. Enter a carriage return in response to the "SUBTOPIC NAME" prompt. User enters three carriage returns and the AISIM READY and ">" prompt are displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
help @concept	A discussion of the top level concept topic and the available topic names are displayed. The user enters 'SCENARIO'. Three carriage returns will page through the help provided on scenarios. User enters two carriage returns and the AISIM READY and ">" prompt are displayed.	.
12. Invoke Library function.		
lib	LIBRARY READY and ">" prompt are displayed.	
13. Change parameters of current session.		
c b(testbuf)	New parameters are listed.	
14. Edit a buffer file.		
edit	There is no buffer at this time. Response informs user that file does not exist. This test can be performed after test 2.4.6. Use "quit" to exit the editor.	
15. Display valid Library commands.		
help	A description of the LIBRARY READY level and a list of the valid commands are displayed. One carriage return will page through the help provided. User enters a carriage return in response to the "SUBTOPIC NAME?" prompt. User enters two carriage returns and the LIBRARY READ and ">" prompt are displayed.	.
16. List current parameters.		
list	Current parameters in effect are displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
17. Return to AISIM READY level.		
end	AISIM READY and ">" prompt are displayed.	

2.4.2 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. Invoke Design User Interface.		
d p(intgtest) t("term")	"Term" is replaced by terminal designation for terminal being used. User is asked to continue or abort. User enters "yes". Create data base prompt is displayed. User enters "yes". Data base is copied. "	"*" prompt is displayed.
2. Edit one of each of the following entity types.		
e r,restest,new e i,itemtest,new e t,tabltest,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.
3. Edit new scenario entity.		
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". User verifies that	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	default units in the form are seconds and test proceeds as in 2 above.	
4. Edit new process entity.		
e p,proctest,new	Process form is displayed. User enters random data into form and enters it. "#" prompt is displayed.	
5. Display process editor menu.		
menu	On an HP2647A, HP2648A, or TEK4105 terminal, the list of Primitives is displayed, or on an HP2623 or VT100 terminal, a message is displayed informing the user that the menu will not fit on the screen.	
6. Place each of the following Primitive types.		
p alloc p assign p branch p call p create p comment p compare p dealloc p destroy p entry 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. The screen is redrawn whenever the newest Primitive would be placed off the screen. The new Primitive appears at position three on the screen.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
7. Automatic File and Action creation.		
p action p read p write p write p action	For action name enter "acttest". Verify that the units field contains "seconds". For read file enter "filetest". For first write file enter "filest2". For second write file enter "filest3". For second action name enter "actst2". After the forms are entered, the system will notify the user that corresponding entities are being created.	
8. Test display of Eval primitive.		
p eval	Type the following para- meters: variable: "delay", expression: "length*time", comment: "calculate delay time". Enter the form. Variable, expression, and comment are displayed. Comment is enclosed in single quotes.	
c 31	Change expression as follows: "abc+def-ghi/klm+random- log10(100.0)+loge(100.0)** sine(2)-tangent(2)*table (5)+integer (random*10)". Enter form. Four lines of expression and no comment are displayed.	
c 31	Blank out last line of ex- pression and comment. Enter form. Three lines of expression are displayed and following line is blank.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
9. Display portions of Process moving both up and down.		
u 13 d 5 top bottom	User enters combination of movement commands. After each command, screen is erased and new portion of Process is displayed. "#" prompt is redisplayed.	
10. Change selected Process Primitives.		
c 1 c 2 c 3 c 8 c 10 c 15	Change various primitives 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 screen to show changed primitive and displaying "#" prompt. If primitive is off the screen, it is redrawn at position three.	
11. Delete selected Process Primitives.		
top del 5 del 2,2 del 13 down 23 del 26,2	Display top of process. Randomly select Primitives to be deleted. In response, the selected Primitive and those displayed below it are erased. Primitives below one selected are redrawn. Note that Primitives may only be deleted if presently shown on the screen, so "del 13" command is rejected. "Del 26" command causes file entity "filest3" and action entity "actst2" to be deleted also. "#" prompt is displayed.	
12. Set Nodraw mode.		
nodraw	Mode is set to Nodraw and "#" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
13. Test Nodraw mode.		
top	Display top portion of	
c 3	Process. Modify selected	
c 5	Primitives. The changes are	
	not reflected on the screen.	
	"#" prompt is displayed.	
14. Display process to show changes.		
redraw	Top portion of Process is	
	redrawn reflecting all	
	changes. "#" prompt is	
	displayed.	
15. Exit the Process Editor.		
end	Screen is cleared and "*" prompt is displayed.	
16. Verify automatic deletion of file and action entities.		
list file	Files "filetest" and	
	"filest2" should be	
	listed.	
list action	Action "Acttest" should	
	be listed.	
17. Copy one of each entity type.		
copy r,restest,res2	User enters list of	
copy f,filetest,file2	commands, one at a time.	
copy i,itemtest,itm2	User is prevented from	
copy t,tabltest,tabl2	copying file entity.	
copy a,acttest,act2	After each command, "*" prompt is displayed.	
copy v,vartest,var2		
copy c,contest,con2		
copy q,quetest,q2		
copy l,loadtest,load2		
copy s,scentest,scen2		
copy p,proctest,proc2		
18. Verify that Copy commands worked.		
list r	Original entities and	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
list f list i list t list a list v list c list q list l list s list p	copies are listed. "*" prompt is displayed after each command.	
19. Delete original of each entity type.		
del r,restest del i,itemtest del t,tabltest del a,acttest del v,vartest del c,contest del q,quetest del l,loadtest del s,scentest del p,proctest del f,filetest	For action "acttest" a message is displayed noting that action is still referenced by action primitives. User is prevented from deleting file "filetest". After each command, system performs processing and displays "*" prompt.	
20. Change default time units for forms.		
units minutes	"*" prompt is displayed	
21. Verify time units change.		
e l,loadtime,new e s,scentime,new e p,proctime,new p action end	For load and scenario, the user can verify that the time units are minutes and enter the form. For the process, enter the first form and then place the action primitive when the "#" prompt appears. Verify the units, enter the form, and exit the process editor interface. "*" prompt is displayed.	
22. Test character validation.		
e r,res.ab,new	Message notifies user that	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	name has invalid character ".". Enter name RES_\$. Enter the following parameters: initial units: 5.0, total units: 5.A, descr: test valid chars!!!, attributes: name1, attr1, name2, % time. Enter form. As prompted, enter 5.0 for 5.A and time1 for % time.	
23. Change description of a file entity and prohibit name change.		
e f,filetst2	Change name to "filetest". Enter form. Message is displayed informing user that name change is not allowed.	
e f,filetst2	Change description to "file entity for filetest".	
24. List each entity type.		
list r list f list i list t list a list v list c list q list l list s list p	For file entities both files previously created are displayed. Otherwise, copied entities and new load, scenario and process entities are displayed.	
25. Save the data base.		
save	Terminal beeps. "*" prompt is displayed.	
26. Delete existing Resources and verify. Create new Resource.		
del r,* list r e r,archtest	Processing performed and "*" prompt is displayed. User lists resources to verify that all	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	are deleted. System provides null list and displays "*" prompt. User enters new Resource, filling in Resource form with miscellaneous information.	
27. Edit an architecture.		
a	Screen is cleared. Architecture grid is drawn. "*" prompt is displayed. If terminal is a VT100, Nodraw mode is set, so the following changes are not reflected on the screen.	
28. Definition of symbol/Resource prototypes for various symbols.		
def sqr,archtest def bus def crd def dia def drm def dsk def lod def plg def prp def ptr def rec def tap def tri def tty	After processing each command, the system displays 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. This form is the same as that for resource entities. The user should enter miscellaneous information into this form and enter it. The "*" prompt is displayed.	
29. Placement of symbols and connections.		
p sqr,AA,20,20 p tri,BB,40,40 p lod,CC,60,40 con AA,CC,con1 con AA,BB,con2_F	Starting with these commands, create an architecture. On a terminal other than a VT100, when the cursor appears for the "con" commands, type any character except period to complete connection. If on a VT100, a straight-line connection	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	is automatically created; type "redraw" to show changes.	
30. Move a symbol within the architecture.		
move AA,30,30	Symbol is erased and redrawn at new location. Connection is replaced. "#" prompt is displayed. If on a VT100 terminal, type "redraw" to verify.	
31. Redo a connection within the architecture using multiple segments.		
recon con2_F	If the user is not on a VT100, the connection is erased and graphics cursor is displayed to user. Enter the connection by moving graphics cursor, typing a period, moving graphics cursor, typing a period, and typing any non-period alphanumeric character. If the user is on a VT100, a straight-line connection is automatically created between the two nodes; use "redraw" to verify -- connection should be the same as step 28.	
32. 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 the screen is erased and then redrawn at a new location. "#" prompt is displayed.	
33. Manipulate LPT functions.		
list lpt	LPT is listed in alpha	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	memory of terminal. LPT should represent point-wise connection of adjacent nodes. "#" prompt is displayed.	.
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 displayed.	.
list lpt	LPT is listed as above. Defined path is added. "#" prompt is displayed.	.
del path,BB,CC	Use "from node" and "to node" as above. System processes command. "#" prompt is displayed.	.
list path,BB,CC	Use "from node" and "to node" as above. System responds with "NO SUCH PATH". "#" prompt is displayed.	.
list lpt	LPT is listed as in last list lpt command except deleted path is gone. "#" prompt is displayed.	.
34. Change node and connection parameters.		
chg name,CC,XX	Node name is changed on screen, if not on a VT100	.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	terminal. If on a VT100, type "redraw" to verify. "#" prompt is displayed.	
list lpt	Note change to new node name in LPT. "#" prompt is displayed after listing of LPT.	
chg size,BB,4 list lpt chg type,AA,plg list lpt	Appropriate changes are made. After each command, list LPT and verify no change to LPT. "#" prompt displayed after each command in this sequence. On a VT100, use "redraw" to verify changes.	
chg name,Con1,Conx list lpt	Connection name is changed. List LPT to verify correct LPT change. "#" is displayed after each command. On a VT100, use "redraw" to verify change.	
35. Save data base while in architecture.		
save	Terminal beeps. "#" prompt is displayed.	
36. End architecture session.		
end	Screen is cleared. LPT message prompts are output. "#" prompt is displayed.	
37. Verify LPT algorithm operation.		
info	Messages describing LPT algorithms are displayed. "#" prompt is displayed.	
end	No LPT processing done. "*" prompt is 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	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	generator prompt.	
a	LPT algorithm A operates. Control is passed to DUI. "*" prompt is displayed. User should reenter architecture, view LPT with "list lpt" and verify against the architecture. User then returns to DUI session, enters architecture design 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. "*" prompt is displayed.	
38. 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 plg in architecture) e r,BB	Resource form presented. User verifies presence of attributes as specified in Step 28. Repeat for triangle symbol. "*" prompt is displayed after entering forms.	
39. Reenter Architecture.		
a	Grid is redrawn. "#" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
40. Delete architecture nodes and connections and exercise help. win 1,20,u,30 del conx del con2_F del BB del * help	Use various delete commands as shown at left to verify use of each. Appropriate symbols and connections are deleted. Del * causes diagram to be cleared. "#" prompt is displayed after processing of each command. Type "redraw" on VT100 terminal to verify. View help display. Enter carriage return to receive "#".	
41. Exit the architecture editor. end	Screen is cleared. LPT generator prompt messages are displayed. "#" prompt is displayed.	
42. End LPT. end	"*" prompt is displayed.	
43. Obtain help information. help	A description of the DUI and a list of available commands appears. Two carriage returns will page through the help provided. User enters "delete" in response to the "SUBTOPIC NAME?" prompt. One carriage return will page through the additional help information displayed. Enter a carriage return in response to the "SUBTOPIC NAME?" prompt. User enters two carriage returns and the "*" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
44. End DUI.		
end	Data base save yes/no save prompt is displayed. User responds yes or no as desired. If no, DUI ends and AISIM READY prompt is displayed. If yes, terminal beeps and then AISIM READY is displayed.	

2.4.3 Analysis User Interface Test Procedure

The Analysis User Interface test procedure verifies four functions:

1. that a model data base can be translated by the Translate Function,
2. that the translated model can be initialized by the Analysis User Interface,
3. that the Analysis User Interface commands can be successfully exercised against the initialized model, and
4. that the capabilities of the simulator function properly.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke the Analysis User Interface (AUI).		
a p(testdbl)	User is queried "Yes to proceed, No to abort". User enters "Yes". Translation of model data base is performed. User is asked if (s)he wants to add a description of the run. User enters "yes". A form is displayed and user can modify description. Model initialization takes place. The following message is displayed: "NO ERRORS DETECTED IN MODEL TRANSLATION YOU MAY NOW ENTER COMMANDS". "#" prompt is then displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
2. List each entity type.		
l c	Appropriate list of entities	
l r	is displayed and "#" prompt	
l p	is displayed after each command.	
l v	Check lists against Appendix	
l q	A.	
l i		
3. Define Plots.		
def r,b6b1	An attribute form for the	
# in wait queue	selected entity type is	
cumulative mean	displayed. User selects	
def r,b4b5	one attribute and enters	
# in busy queue	form. A statistic form is	
cumulative mean	displayed. User selects	
def v,v_router	one statistic and enters	
current	form. Final command defines	
def p,mrs	two Resource plots with one	
completion time	command. "#" prompt is	
cumulative mean	displayed after each	
def i,msg	command.	
time in system		
cumulative mean		
def r,b1b2,b2b3		
wait time		
cumulative mean		
4. List current plot definition titles.		
list title	A list of the current plot definitions appears and the "#" prompt is displayed.	
5. Delete a plot definition.		
delete title,2	Plot definition is deleted. Deletion should be verified by repeating step 4. "#" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
6. Set a breakpoint.		
set r,blb2,gt,0	Appropriate entity attribute and statistic selection forms are displayed. Pick condition such as current number in busy queue. User enters forms and receives "#" prompt is displayed.	
7. Initiate the simulation.		
go	Simulation begins. When breakpoint is reached, simulation is halted and user is allowed to enter commands. "#" prompt is displayed.	
8. Display selected entity statistics.		
lv r,blb2 lv r,h2 lv i,msg lv stream	All statistics associated with specified entity are displayed. Enter "y" to continue. "#" prompt is displayed.	
9. Edit variable.		
edit v,v_router,0	The screen is cleared and "#" prompt is displayed.	
10. Continue the simulation		
go	Simulation continues until terminated. Message indicating normal termination is displayed. User is allowed to enter commands. "#" prompt displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
11. Display the plots in various combinations.		
plot	Menu of plots is displayed. User selects desired plots. Plots are displayed. "#" prompt is displayed. User should repeat for various plots.	
12. Change units and redisplay last plot.		
units minutes	Select same plots and note change in units on display. "*" prompt is displayed.	
13. Save plot data and definitions		
save def,defset1, definitions	Definitions and plots are saved. Screen is cleared after each command and "#" prompted is displayed.	
save plot,plotset1, run1 results		
14. List the saved plot sets and definition sets.		
l plot	The names of each plot set and definition set and their descriptions are displayed.	
l def	"#" prompt is displayed.	
15. Exit Analysis User Interface.		
end	Screen is cleared and AISIM READY prompt is displayed.	
16. Reenter AUI.		
a p(testdbl)	See step 1.	
17. Edit selected constant to change simulation results.		
edit c,secs_chr,150	"#" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
18. Get plot definitions.		
get def,defset1	Screen is cleared and "#" prompt is displayed.	
19. Delete a plot definition.		
del title,6	See step 5.	
20. Set a breakpoint.		
set r,b3b4,gt,0	See step 6.	
21. Cancel the breakpoint.		
can	Breakpoint is cancelled. Screen is cleared followed by "#" prompt.	
22. Set infinite resources.		
infres blb2,b2b3	Infinite resources set, for specific resources. "#" prompt is displayed.	
23. Execute simulation.		
go	Simulation executes. Initial message displays the real time at the start of the simulation. At the end of the real time and simulation time is displayed. Normal termination messages are displayed. "#" prompt is displayed.	
24. Save plot results.		
save plot,plotset2, run2 results	Plot results and plot definitions are saved. "#" prompt is displayed.	
save def,defset2, run2 definitions		
25. Exit the Analysis User Interface.		
end	See step 15.	

The following procedures test the capabilities of the AISIM simulator by the use of various data bases provided on the system tape. These data bases are called TESTDBA.DBF, TESTDBB.DBF, TESTDBC.DBF, TESTDBD.DBF, TESTDBE.DBF, and TESTDBF.DBF. Appendix B contains the initialization report for each of these data bases before any of the following tests are run, and Appendix C contains the output report for each after the following tests have been completed. These reports should be compared with the observed test results to verify the operation of the AISIM simulator.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
26. Test item, resource preemption, call Process, and action restart logic.		
a p(testdba)	See step 1.	
go	Initiate simulation. When simulation completes, message indicating normal termination is displayed. "#" prompt is displayed.	
end	User exists AUI. Screen is cleared and AISIM READY prompt is displayed. Output report TESTDBA.RPT should be compared with report in Appendix C.	
27. Test keywords, parameter passing, and Read/Write.		
a p(testdbb)	See step 1.	
go	Initiate simulation. When simulation completes, message indicating normal termination is displayed. "#" prompt is displayed.	
end	User exits AUI. Screen is cleared and AISIM READY prompt is displayed. Output report TESTDBB.RPT should be compared with report in Appendix C.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
28. Define plot definitions in preparation for batch mode processing.		
a p(testdbc)	See step 1.	
def i, msg	Attribute form is displayed. Select "time in system" and enter form. Statistics form is displayed. Select "cumulative mean" and enter form.	
save def, onedef	Save plot definition.	
end	User exits AUI. AISIM READY prompt is displayed.	
29. Submit run to batch queue.		
batch	User is asked to enter 1-8 character project name. "TESTDBC" should be entered. User is asked if model should be translated. "Yes" should be entered. User is asked if description is to be entitled. Enter "yes" and fill in form. User is prompted for commands. Enter: GET DEF, ONEDEF GO SAVE PLOT, ONEPLOT END NO User is notified that file subbatch.com is created.	
submit/notify/ name=testdbc subbatch.com	Submit job to computer.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
replot p(testdbc) get plot,oneplot plot end	When the job is completed, enter Replot to verify that the plot was saved. Retrieve the plot data and plot it. Then exit Replot and return to the AISIM READY prompt. Report TESTDBC.RPT should be compared with Appendix C.	
30. Test variable time units, message routing, and resource logic.		
a p(testdbd)	See step 1.	
go	Initiate simulation. Verify display of end of period messages. When simulation completes, message indicating normal termination is displayed. "#" prompt is displayed.	
end	User exits AUI. Screen is cleared and AISIM READY prompt is displayed. Output report TESDBD.RPT should be compared with report in Appendix C. Verify action "xfer" for use of scientific notation for very small numbers.	
31. Test Arithmetic function.		
a p(testdbe)	See step 1.	
go	Initiate simulation. When simulation completes, message indicating normal termination is displayed. "#" prompt is displayed.	
end	User exits AUI. Screen is cleared and AISIM READY prompt is displayed. Output report TESTDBE.RPT should be compared with report in Appendix C.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
32. Test error handling for arithmetic constructs during initialization.		
a p(testdbf)	User is queried "yes to proceed, no to abort". User enters "yes". Translation of model data base is performed. A message indicating that errors were detected during initialization is displayed.	
edit	The report will be placed in the EDT editor so the user can examine the errors. The first error results from too few parentheses. Add ")" after "TDIS(1)". The second error results from the use of brackets in a function call. The third error results from a missing operator between two variables. Correct with a "*" before TDIS(2). These errors should be corrected by reentering the DUI and repeating step 32.	
33. Test error handling in arithmetic constructs during execution.		
go	Initiate simulation. Simulation halts when an error is detected.	
end	The user exits the AUI, finds the error via the EDIT command. The error results from the use of brackets in a Table reference. The error should be corrected by using parentheses and the model re-analyzed. The run will again halt due to error. This time parentheses are mistakenly used in an entity reference. They should be replaced with brackets. The simulation will then run to termination.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
end	User exits AUI and returns to the AISIM READY prompt.	

2.4.4 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 2.1.4.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke the Replot User Interface.		
replot p(testdbl)	User is queried "yes to proceed, no to abort". User enters "yes". "\$" prompt is displayed.	
2. List set names and titles		
l def l plot l title	"L def" lists all plot definition sets, "l plot" lists all plot data sets, "l title" lists current plot titles--none at this point. "\$" prompt is 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. "\$" prompt is displayed.	
4. List titles		
l title	Titles of current plots are displayed. "\$" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
5. Display the plots in various combinations.		
plot	Current plot titles are displayed for user selection. After selection, plot is generated and "\$" prompt is displayed.	
6. Change units and redisplay last plot.		
units minutes	Select same plots and note change in units on display. "\$" prompt is displayed.	
7. Clear the current plots.		
clear	Current plot information is purged. "\$" prompt is displayed.	
8. Repeat steps 3-5 selecting new plots.	See steps 3-5.	
9. Delete a plot set.		
delete plot,plotset1	Plotset is deleted. "\$" prompt is displayed.	
10. Delete a definition set.		
delete def,defset1	Definition set is deleted. "\$" prompt is displayed.	
11. List sets.		
l def l plot	List of remaining sets of each type are displayed followed by "\$" prompt.	
12. Save plot data to a new set.		
save plot,plotset3, plot saved in Replot	Plot set containing currently selected plots is created. "\$" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
13. Exit the Replot User Interface.		
end	Screen is cleared. AISIM READY prompt is displayed.	

2.4.5 Hardcopy User Interface Test Procedure

The Hardcopy User Interface test verifies that the data interface between the AISIM system and the terminal is operating properly, and it exercises the functions described in section 2.1.5.

<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(testdbl)	User is asked to continue or abort. User enters "yes". User is then prompted whether to plot all Processes. User enters "no". If the user is on an HP2647A or HP2648A terminal, the user is prompted for paper size and then to position paper. User positions paper. If the user is on a TEK4105 terminal, the user is prompted for copy size and to position paper. On an HP2623 user is prompted to position paper. On an HP2623 user is prompted to position paper. User is prompted for Processes to plot one at a time. Processes MRS, T01, and T02 are plotted. User is returned to AISIM READY level when user indicates desire to exit with carriage return.	
2. Invoke the HUI-plot all Processes.		
hcopy p(testdbl)	User is asked to continue or abort. User enters "yes".	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	User is then prompted whether to plot all Processes. User enters "yes". If the user is on the HP2647A or HP2648A terminal, the user is prompted for paper size and to position paper. User positions paper. If the user is on a TEK4105 terminal, the user is prompted for copy size and to position paper. On an HP2623 terminal user is prompted to position paper. Processes are plotted. User is returned to AISIM READY level.	

2.4.6 Library User Interface Test Procedure

The five Library subfunctions are Checkin, Checkout, Convert, Mergein, and Mergeout. Test steps associated with the testing of Checkout are preceeded by a CO (i.e., CO1, CO2, CO3 etc.). Mergein steps are preceeded by an MI (i.e., MI1, MI2, etc.). Likewise Mergeout, Checkin, and Convert steps are preceeded by MO, CI, and CV 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.	
CO1. 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.	
CO2. List all models in the library..		
1 *	All models in system library are listed. "*" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
C03. 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.	
C04. Flag a model to be Checked out.		
ext commun_a	The model is flagged for extraction. "*" prompt displayed.	
C05. Exit the Checkout Function.		
end	A message is displayed when the Checkout is completed. The user is returned to the LIBRARY READY level.	
MI1. Invoke the Mergein Function using the same buffer with an empty data base.		
mi p(testdb) b(testbuf)	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.	
MI2. Invoke the Mergein Function with same data base and buffer to create naming conflicts.		

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
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".	.
MI3. Resolve the naming conflicts.		
(msg) rn message (chlio) rp (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.	
M01. Invoke the Mergeout Function using the same buffer and data base.		
mo p(testdb) B(testbuf)	Verificaton messages and prompt displayed. User enters yes. User prompted to reuse buffer. User enters yes. "*" prompt is displayed.	
M02. List entities in the data base.		
l item l variable l process	Entities of the specified types are displayed. "*" prompt is displayed.	
M03. Select entities to be merged out and list them on the screen.		
s i,message s p,chlio	Selected entities are flagged to be merged out. "*" prompt is displayed.	
M04. Flag duplicate selections.		
s i,message	Message will be displayed informing user of a duplicate	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	selection. The entry is not flagged for selection.	
M05. List selections.		
l sel	Selections are listed. "*" prompt is displayed.	
M06. Exit the Mergeout Function.		
end	The Mergeout operation is performed. The user is returned to the LIBRARY READY level.	
CI1. Invoke the Checkin Function using the same buffer and an empty library.		
ci l(testlib) b(testbuf)	Verification messages and prompt are displayed. User enters "yes". User is asked if the library should be created. User enters "yes".	
CI2. Describe the model to be checked in.		
(name) MODEL <number> <description>	The user is prompted for a document reference number and a description. User is asked if library update is to be permanent. User enters "yes".	
C06. Invoke the Checkout Function using the same buffer and library.		
co l(testlib) b(testbuf)	Verification messages and prompt displayed. User enters "yes". Prompt to reuse buffer. User enters "yes". "*" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
C07. List all models in the data base.		
1 *	Names of models in the data base are listed.	
C08. List the contents of the previously checked in model.		
1 model	The entities of model are listed as in C03 above.	
C09. Delete the model from the library.		
delete model	The model is deleted. "*" prompt is displayed.	
C010. Verify the deletion with the list command.		
1 *	Existing models are listed.	
C011. Exit the Checkout Function.		
end	User is returned to the LIBRARY READY level.	
CV1. Invoke the Conversion Function for a version 3.0 data base.		
conv p(testconv3) dbv(v30)	Verification messages and prompt are displayed. User enters "yes". Completion message is displayed and user is informed of the name of the file containing any error messages and and a log of name changes. User is returned to the LIBRARY READY level.	
CV2. Edit conversion report to view any errors or name changes.		
edit conv	View file with edit commands.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
CV3. Verify conversion		
end glist p(testconv3)	Return to AISIM READY level. Invoke Genlist program to create a listing of the data base and place in file testconv3.lst. Compare with Appendix D.	
CV4. Invoke conversion function for a version 4.0 data base.		
lib	Return to LIBRARY READY.	
conv p(testconv4) dbv(v40)	Verification messages and prompt are displayed. User enters "yes". Completion message is displayed and user is informed of the name of the file containing any error messages and a log of name changes. User is returned to the LIBRARY READY level.	
CV5. Edit conversion report to view any errors or name changes.		
edit conv	View file with edit commands.	
CV6. Verify conversion.		
end glist p(testconv4)	Return to AISIM READY. Invoke Genlist program to create a listing of the data base and place in testconv4.lst. Compare with Appendix D.	

2.4.7 File Management User Interface Test Procedure

This test exercises the commands available in the File Management User Interface as described in 2.1.7.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke File Management		

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
User Interface.		
F f(testfile)	Error checking is off. User is asked to continue or abort. User enters "yes". User is asked if file should be created. User enters "yes". FUI prompt "*" is displayed.	
2. Place one of each entity type.		
p p,1 p r,2 p i,3 p q,4 p t,5 p a,6 p al,7 p n,8 p r[],9 ratr1 ratr2 ratr3 p p[],12 patr1 p i[],13 i1 i2 i3	Each form is displayed. User enters data into form and then enters the form. "*" prompt is displayed. User issues next place command.	
3. Delete lines from the file.		
del 1 del 4,6	Delete lines 1,4,5,6. User is informed of the number of lines deleted.	
4. List lines from the file.		
l 2 l 7,9	List lines, 2,7,8,9 from the file.	
5. Display help information.		
help	A description of the File Management User Interface and available	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	commands is displayed. User enters one carriage return to page through the help provided. User enters "RENUM" in response to the "SUBTOPIC NAME?" prompt. Information on the RENUM command is displayed. Two carriage returns are entered and the "*" prompt is displayed.	
6. Insert a line and renumber the File.		
p r,2 renum	Places a resource at line 2.1 then the renumbering numbers the file lines 1-12.	
7. Test LISTON mode.		
liston p i,12	The item is placed after line 12 (at line 13) and line 13 is printed on the screen.	
8. Test LISTOFF mode.		
listoff p p,10	The process is placed at line 10, but the line is not printed.	
9. End	Save query is displayed. User enters "yes". Return to AISIM READY.	
10. Invoke File Management User Interface with error checking on.		
F f(testfile) e(testdbl)	Error checking is on and checks against project testdbl. User is asked to continue or abort. User enters "yes." "*" prompt displayed.	
11. Place attributes with error checking.		
p r[],B1,1	The template for resource B1 is displayed. User should enter values for all of B1 attributes.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
12. Place entity with error checking. p r,B1B2,2	The entity's existence is verified. The entity is then added at line 2.1.	
13. List with error checking on. list r	All of the resources in testdbl will be listed on the screen.	
14. Exit File Management Interface end	Save query is displayed. User enters "yes". User is returned to the AISIM READY level.	
15. Create file using text editor edit/edt testin.txt	EDT editor is invoked. Enter the following values into the file: CASE1 CPU SPEED1 LENGTH1 OVHD1 Exit the editor, saving the data.	
edit/edt case2in.txt	EDT editor is invoked. Enter the following values into the file: CASE2 CPU SPEED2 LENGTH2 OVHD2 Exit the editor, saving the data.	
16. Invoke FUI for first case file. F f(testin)	User is asked to continue or abort. User enters "yes". "*" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
del 1	Delete first line.	
p n,1	Replace first value with numeric. Enter "1" in form.	
del 4,5	Delete last 2 lines.	
p n,4	Enter "5" in form.	
p n,5	Enter "2" in form.	
end	Enter "yes" to save query. Return to AISIM READY.	
17. Reinvoke FUI with error checking.		
F f(testin) e(testdb2)	User is asked to continue or abort. User enters "yes". "*" prompt is displayed.	
del 2	Delete second value.	
p r,2	Place a resource at 2. Enter "CPUA". Error message is displayed since CPUA does not exist. Enter "CPU1".	
del 3	Delete third value and	
p n,3	replace it with a numeric. Enter "10".	
end	Return to AISIM READY.	
18. Modify case2in file in FUI.		
F f(case2in)	User is asked to continue or abort. User enters "yes". "*" prompt is displayed.	
del 5	Delete fifth value.	
p n,5	Enter "ovhd2". Error message is displayed. Enter "3".	
end	Return to AISIM READY.	
19. Invoke FUI with error checking.		
F f(case2in) e(testdb2)	User is asked to continue or abort. User enters "yes". "*" prompt is displayed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
del 1,4 p n,1 p r,2 p n,3 p n,4 end	Delete first four lines. Enter "2". Enter "CPU2". Enter "20". Enter "8". Enter "yes" to save query. Return to AISIM READY.	
20. Run simulation using Case 1 data.		
a p(testdb2)	User is asked to continue or abort. User enters "yes".	
go	User initiates simulation. Use "end" to exit AUI when simulation completes.	
21. Change file associations.		
edit/edt testdb2.fnm	Edit file associations file. Change lines to: TESTIN CASE2IN.TXT TESTOUT CASE2OUT.TXT Exit editor, saving data.	
22. Invoke AUI.		
a p(testdb2)	User is asked to continue abort. User enters "yes". "*" prompt is displayed.	
go end	User initiates simulation. Use "end" to exit AUI when simulation completes.	
23. Verify output files.		
type testout.txt	List first output file. File should contain the following values: \$TEST1 PROC1 CPU1 MSG 52	
type case2out.txt	List second output file. File should contain the following values:	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
	STEST2 PROC2 CPU2 MSG 163	

2.4.8 Help Editor Interface Test Procedure

This test exercises the commands available in the Help Editor Interface as in 2.1.8.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke HEI.		
HEI	User is asked to continue or abort. User enters "yes". "*" prompt is displayed.	
2. Display help information.		
help end	A description of the HEI end command is displayed. User enters a carriage return and the topic level screen is displayed. User enters update and a description of the HEI update command is displayed. User enters two carriage returns. "*" prompt is displayed.	
3. Invoke UPD.		
U	The UPDATE "#" prompt is displayed.	
4. Add help.		
add note,table-size	A form is displayed with the note name and the user enters help information.	
5. List help.		
l n	The available notes are listed.	

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
6. Change help.		
chg n,test	A message is displayed informing the user no note named test is available to change. "#" prompt is displayed.	
chg,n,table-size	A form is displayed with the current help information. User can change information as desired, and then enter form.	
7. Save help.		
s end	The HEI "*" prompt is displayed.	
8. Display help.		
help @n,table-size	The information just entered is displayed. User enters two carriage returns.	
9. Renter UPD.		
u	"#" prompt is displayed.	
10. Display help.		
help delete,topic-name	Display help information on the delete command parameter, topic-name. User enters two carriage returns.	
11. Remove help.		
del n,table-size list n end	The table-size note will be deleted. User enters "yes" to save changes and "*" prompt will be displayed.	
12. Exit HEI		
end	Return to AISIM READY.	

2.5 Sample Completed Test Procedure

Figure 2-3 shows an example of a test procedure annotated with the results of exercising the procedure. This will be the form used to generate the acceptance test report.

2.6 Certification Statement

The acceptance test report will contain the following certification statement which will be signed by Lt. Michael F. Merriman, Project Officer, Requirements Analysis.

All tests as described in this report have been performed and results have been observed and noted herein.

The test procedures contained in this manual are certified to be acceptable for acceptance testing of AISIM version 5.0.

<u>FUNCTION/COMMANDS</u>	<u>ADDITIONAL INPUTS/ EXPECTED RESULTS</u>	<u>TEST RESULTS</u>
1. Invoke Design User Interface		
d p(intgtest) t(term)	"Term" is replaced by terminal designation for terminal being used. User is asked to continue or abort. User enters "yes". Create data base prompt is displayed. User enters "yes". Data base is copied. "*" prompt is displayed.	Design function invoked.
2. Edit one of each of the following entity types.		
e r,restest,new e i,itemtest,new e t,tabltest,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.	Each entity form displayed correctly and data entered.
3. 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 2 above.	Request to create entity displayed. Form was displayed and data entered.
4. e, p,proctest,new	Process form is displayed. User enters random data into form and enters it. "#" prompt is displayed.	Process form displayed without query and data entered.
5. menu	On an HP2647A, HP2648A, or TEK4105 terminal, the list of Primitives is displayed, or on an HP2623 or VT100 terminal, a message is displayed informing the user that the menu will not fit on the screen.	Menu displayed correctly.

Figure 2-3. Sample Test With Results

APPENDIX A

Model Description and Results Verification for

TESTDB1.DBF - Run 1

\$ SIMULATION REPORT \$
\$ \$
\$ ATSIM VERSION 5.0 \$
\$ \$
\$ HUGHES AIRCRAFT COMPANY \$
\$ \$
\$ 05/15/87 \$
#####

04/21/1987 10:23:09

TESTDB1 - RUN1

TEST THE USE OF VARIOUS AUT COMMANDS

GLOBAL CONSTANT DEFINITION.....

CONSTANT INITIAL	COMMENT
WNEMONIC VALUE	
SECS_CHR 167	MSECONDS PER CHARACTER SERIAL TRANSFER

FILE DEFINITION.....

FILE	COMMENT
WNEMONIC	

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

VARIABLE INITIAL	COMMENT
WNEMONIC VALUE	
V_ROUTER 0	MONITOR VARIABLE TO PLOT ROUTE OVERHEAD

ITEM DEFINITION.....

ITEM	DESCRIPTION

PAGE 2
MSG

MESSAGE FOR INTERNODE COMMUNICATION

ATTR. INITIAL
NAME VALUE
=====

CNODE	\$CNODE
FNODE	\$CNODE
LENGTH	99999999
RPROC	\$ERROR
RPROC PRI	99999999
TNODE	\$CNODE
TYPE	\$REQNORE

QUEUE DEFINITION.....

QUEUE WNEMONIC	MAXIMUM SIZE	COMMENT
=====	=====	=====

RESOURCE DEFINITION.....

RESOURCE TOTAL WNEMONIC	# UNITS	INITIAL # UNITS	DESCRIPTION
=====	=====	=====	=====

B1 RESOURCE FOR CPU NODE

ATTR. INITIAL	
NAME VALUE	
=====	=====
D_CS	0
M_CS	2
M_ROUTE	0
RATE SECS_CHR	

B1B2 RESOURCE FOR CHANNEL CONNECTOR

ATTR. INITIAL	
NAME VALUE	
=====	=====
RATE	50

B2 RESOURCE FOR CPU NODE

ATTR. INITIAL	
NAME VALUE	
=====	=====
D_CS	0
M_CS	2
M_ROUTE	0
RATE SECS_CHR	

B2B3 RESOURCE FOR CHANNEL CONNECTOR

ATTR. INITIAL	
NAME VALUE	
=====	=====
RATE	

PAGE

3

ATTR. INITIAL
NAME VALUE
=====

RATE 28

RESOURCE FOR CPU NODE

B3

1 ATTR. INITIAL
NAME VALUE
=====

D_CS 0

M_CS 2

M_ROUTE 0

RATE SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

B3B4

1 ATTR. INITIAL
NAME VALUE
=====

RATE 28

RESOURCE FOR CPU NODE

B4

1 ATTR. INITIAL
NAME VALUE
=====

D_CS 0

M_CS 2

M_ROUTE 0

RATE SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

B4B5

1 ATTR. INITIAL
NAME VALUE
=====

RATE 28

RESOURCE FOR CPU NODE

B5

1 ATTR. INITIAL
NAME VALUE
=====

D_CS 0

M_CS 2

M_ROUTE 0

RATE SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

B5B6

1 ATTR. INITIAL
NAME VALUE
=====

RATE 28

PAGE 4

RESOURCE FOR CPU NODE

1 1 INITIAL
ATTR NAME VALUE
===== 1 =====
D_CS 0
M_CS 2
M_ROUTE 0
RATE SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

1 1 INITIAL
ATTR NAME VALUE
===== 28 =====
RATE

BUFFER

1 1

RESOURCE FOR NODE

1 1 INITIAL
ATTR NAME VALUE
===== 0 =====
D_CS 0
M_CS 0
M_ROUTE 0

RESOURCE FOR NODE

1 1 INITIAL
ATTR NAME VALUE
===== 0 =====
D_CS 0
M_CS 0
M_ROUTE 0

RESOURCE FOR NODE

1 1 INITIAL
ATTR NAME VALUE
===== 0 =====
D_CS 0
M_CS 0
M_ROUTE 0

RESOURCE FOR NODE

1 1 INITIAL
ATTR NAME VALUE
===== 0 =====
D_CS 0
M_CS 0
M_ROUTE 0

RESOURCE FOR NODE

H5 1 ATTR. INITIAL
NAME VALUE
=====

D_CS	0
M_CS	0
M_ROUTE	0

RESOURCE FOR NODE

H6 1 ATTR. INITIAL
NAME VALUE
=====

D_CS	0
M_CS	0
M_ROUTE	0

RESOURCE FOR CHANNEL CONNECTOR

HB1_A 1 ATTR. INITIAL
NAME VALUE
=====

RATE	SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

HB1_B 1 ATTR. INITIAL
NAME VALUE
=====

RATE	SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

HB2_A 1 ATTR. INITIAL
NAME VALUE
=====

RATE	SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

HB2_B 1 ATTR. INITIAL
NAME VALUE
=====

RATE	SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

HB3_A 1 ATTR. INITIAL
NAME VALUE
=====

RATE	SECS_CHR

RESOURCE FOR CHANNEL CONNECTOR

HB3_B 1 ATTR. INITIAL

PAGE 6

NAME VALUE
=====

RATE SECS_CHR

HB4_A

RESOURCE FOR CHANNEL CONNECTOR

1 INITIAL
ATTR. NAME VALUE
=====

RATE SECS_CHR

HB4_B

RESOURCE FOR CHANNEL CONNECTOR

1 INITIAL
ATTR. NAME VALUE
=====

RATE SECS_CHR

HB5_A

RESOURCE FOR CHANNEL CONNECTOR

1 INITIAL
ATTR. NAME VALUE
=====

RATE SECS_CHR

HB5_B

RESOURCE FOR CHANNEL CONNECTOR

1 INITIAL
ATTR. NAME VALUE
=====

RATE SECS_CHR

HB6_A

RESOURCE FOR CHANNEL CONNECTOR

1 INITIAL
ATTR. NAME VALUE
=====

RATE SECS_CHR

HB6_B

RESOURCE FOR CHANNEL CONNECTOR

1 INITIAL
ATTR. NAME VALUE
=====

RATE SECS_CHR

ARCHITECTURE LEGAL PATH DEFINITION

FROM	TO	NEXT	VIA
DEVICE	DEVICE	DEVICE	LINK
=====	=====	=====	=====
B1	B2	B2	B1B2
B1	B3	B2	B1B2
B1	B4	B2	B1B2
B1	B6	B2	B1B2

[illegible]

B2 M1 B2 B2 B2 U2 B2 B3 B3 B3 B3 B3 B3 H2 B3 B3 B3 B3 B4 B4 B4 B4 B4 B4 B4 B4 B4 B3 B4 B4 B4 B5 B5 B5 B5 B5 B5 B5 H4 B5 B5 B6 B6 B6 B6 B6 B6 B6

B182 B

A-10

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H4	B4	HR4_A
H4	B5	HR4_A
H4	B6	HR4_A
H4	H1	HR4_A
H4	H2	HR4_A
H4	H3	HR4_A
H4	H5	HR4_A
H4	H6	HR4_A
H5	B1	HR5_A
H5	B2	HR5_A
H5	B3	HR5_A
H5	B4	HR5_A
H5	B5	HR5_A
H5	B6	HR5_A
H5	H1	HR5_A
H5	H2	HR5_A
H5	H3	HR5_A
H5	H4	HR5_A
H5	H6	HR5_A
H6	B1	HR6_A
H6	B2	HR6_A
H6	B3	HR6_A
H6	B4	HR6_A
H6	B5	HR6_A
H6	B6	HR6_A
H6	H1	HR6_A
H6	H2	HR6_A
H6	H3	HR6_A
H6	H4	HR6_A
H6	H5	HR6_A

ACTION DEFINITION.....

ACTION	=====	=====
MNEUMONIC		COMMENT
CS_OH	=====	PROCESSING TO PERFORM CONTEXT SWITCHING
ROUTE_OH	=====	PROCESSING DELAY TO ROUTE A MESSAGE
XFER_OH	=====	DELAY FOR TRANSFER

PROCESS DEFINITION.....

PROCESS	=====	=====
MNEUMONIC		DESCRIPTION
CHANPROC	=====	FULL AND HALF DUPLEX CHANNEL LOGIC

ENTRY	OPCODE	PARM	PARM	COMMENT

[illegible]

LOCAL VARIABLES OF PROCESS CHANPROC

```

=====
1 MSG          (1)  2 TO NODE          3 NXT NODE          4 CHANNEL
5 VSPEED      6 VLENGTH          7 VM_OVHD          8 XFER_DH
9 NODEPROC
PROCESS
=====
UNNEWONIC
=====
DESTPROC
=====
DESCRIPTION
=====
PROCESSING AT DESTINATION OF MESSAGE
=====
=====
OPCODE        PARM        PARM        COMMENT
=====
START         ALL        NO
=====

```

```

MSG      MSG      CNODE      CNODE      CURRENT NODE
MSG      C NODE      TYPE      TYPE      IF RESPONSE, DESTROY
COMPARE  MSG      $RESP      EQ      DESTROY
ALLOC    C NODE      1      ALL
ASSIGN   $PRIORITY
MSG      RPROC      EXECUTE THE CALLED PROCESS
ASSIGN   RPROCPR1    SET PRIORITY FOR REQ PROC
CALL     PRIORITY    PRIORITY WAIT UNTIL COMPLETE
GIVEN    PROCESS
MSG      WAIT
RETURN   MSG
DEALLOC C NODE      1      TYPE      EQ      DEALLOCATE CURRENT NODE
COMPARE  MSG      $REQNDRE      DESTROY      NO RESPONSE REQ -> DESTROY
ASSIGN   MSG      $RESP      TYPE      CHANGE MSG RESPONSE TYPE
ASSIGN   MSG      FNODE      FNODE      SWITCH FROM AND TO NODES
ASSIGN   MSG      TNODE      TNODE      CURRENT NODE IS FROM NODE
CALL     MSG      FNODE      FNODE      RETURN MESSAGE TO ORIGIN
GIVEN    CHANPROC    WAIT      0
BRANCH   MSG
ENTRY    MSG      100
DESTROY  ENTRY      MSG      TERMINATE MESSAGE AT DEST
END       ENTRY      MSG      TERMINATE MSG
END

```

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LOCAL VARIABLES OF PROCESS DESTPROC

```

=====
1 MSG (I) 2 C NODE 3 PROCESS (X) 4 PRIORITY
5 CHANPROC (P)
=====
PROCESS      DESCRIPTION
MNEUMONIC   =====
MRS          GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O
=====

```

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL     NO
GIVEN  PROCESS PRIORITY MSG TYPE
MSG LNTH TO NODE MSG
CREATE MSG LNTH
ASSIGN MSG LNTH LENGTH
=====
CREATE MESSAGE
SET MESSAGE LENGTH
=====

```

```

ASSIGN      PROCESS      RPROC      SET PROCESS
MSG         MSG          MSG         SET PRIORITY
ASSIGN      PRIORITY    MSG         SET DESTINATION
MSG         TO NODE     RPROC PRI   SET MESSAGE TYPE
ASSIGN      MSG         TNODE      EXECUTIVE SERVICING OF MSG
MSG         MSG TYPE    MSG
MSG_ TYPE   MSG_ TYPE   MSG
CALL        NODEPROC WAIT 0
GIVEN      MSG
END

```

LOCAL VARIABLES OF PROCESS MRS

```

=====
1 PROCESS (X) 2 PRIORITY 3 MSG TYPE 4 MSG LNTH
5 TO NODE 6 MSG (I) 7 NODEPROC (P)
PROCESS_
MNEMONIC
=====
NODEPROC
=====

```

```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
GIVEN  MSG
ASSIGN  C_NODE  CNODE  INDICATE CURRENT NODE
ASSIGN  C_NODE  M_ROUTE  PROCESSING RATE OF NODE
RT OVHD  MSG  LENGTH  GET MESSAGE LENGTH
ASSIGN  MSG LNTH  MSG LNTH  COMPUTE PROCESSING DELAY
EVAL    OVERHEAD  MSG LNTH*RT OVHD  SAMPLE OVERHEAD FOR PLOT
ASSIGN  OVERHEAD  V ROUTER
ALLOCC  C_NODE  1  ALL
ROUTE_OH  CONSTANT  OVERHEAD  DELAY FOR ROUTING
MSECONDS  RESUME
DEALLOCC  C_NODE  1  EQ  RELEASE C NODE TO OTHERS
COMPARE  MSG  CNODE  TNODE  CONTROL  IS MSG AT DESTINATION?
CALL     CHANPROC WAIT 0  FORWARD MSG TO CHANNEL
GIVEN    MSG
BRANCH   END 100
ENTRY    DESTPROC WAIT 0  MESSAGE AT DESTINATION
CALL     MSG  CONTEXT SWITCH MESSAGE
GIVEN
=====

```

```

=====
LOCAL VARIABLES OF PROCESS NODEPROC
=====
1 MSG          (1) 2 C NODE          3 RT OVHD          4 MSG LNTH
5 OVERHEAD      8 ROUTE OHI (A) 7 CUIINPROC (P) 8 DESTPROC (P)
=====

```

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

```

LOCAL VARIABLES OF PROCESS T01
=====
1 MSG
=====
PROCESS
=====
MNEMONIC      DESCRIPTION
=====
T02
=====

```

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

```
=====
LOCAL VARIABLES OF PROCESS T02
=====
PROCESS 1 MSG
=====
MNEMONIC (1)
=====
DESCRIPTION
=====
T03
=====
```

PAGE 14

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
=====	START	ALL	NO		
=====	GIVEN	MSG			
=====	RETURN	MSG			
=====	END				

LOCAL VARIABLES OF PROCESS T03
=====

1 MSG	(1)			
PROCESS				
MNEMONIC	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				
MNEMONIC	DESCRIPTION			
=====	=====			
T05				

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
=====	START	ALL	NO		
=====	GIVEN	MSG			
=====	RETURN	MSG			
=====	END				

LOCAL VARIABLES OF PROCESS T06
=====

1 MSG	(1)			
PROCESS				
MNEMONIC	DESCRIPTION			
=====	=====			
T08				


```

=====
START    ALL      NO
GIVEN    MSG
RETURN   MSG
END
=====

```

LOCAL VARIABLES OF PROCESS T08

```

=====
1 MSG
(1)
=====
PROCESS
MNEMONIC
=====
DESCRIPTION
=====
TOHOST1
=====

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
CALL	WRS	WAIT	0		
GIVEN	T01	PRI	\$REQNORE		
	36	H1	MSG		
END					

LOCAL VARIABLES OF PROCESS TOHOST1

```

=====
1 WRS
5 MSG
(P) 2 T01
(P) 3 PRI
4 H1
=====
(R)
=====

```

A-1-1
TOHOST2

```

=====
PROCESS
MNEMONIC
=====
DESCRIPTION
=====
TOHOST2
=====

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
CALL	WRS	WAIT	0		
GIVEN	T02	PRI	\$REQNORE		
	36	H2	MSG		
END					

LOCAL VARIABLES OF PROCESS TOHOST2

```

=====
1 WRS
5 MSG
(P) 2 T02
(P) 3 PRI
4 H2
=====
(R)
=====

```

```

=====
PROCESS
MNEMONIC
=====
DESCRIPTION
=====
=====

```

ENTRY	OP CODE	PARM	PARM	PARM	COMMENT
	START	ALL			
	CALL	MRS	NO		
	GIVEN	T03	WAIT		
		36	PRI		
	END		H3		
				0	
				\$REQUIRE	
				MSG	

LOCAL VARIABLES OF PROCESS TOHOST3

	(P)	(P)	(P)	(R)
1 MRS		2 Y03	3 PRI	4 H3
5 MSG	(I)			

PROCESS	DESCRIPTION
MEMONOMIC	
10H0514	

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL		NO		
CALL	WRS		WAIT	0	
GIVEN	T04		PRI	\$REQNORE	
	36		M4	MSG	
END					

LOCAL VARIABLES OF PROCESS TONOST4

	(P)	(P)	(P)	(R)
1 WRS	2 T04	3 PRI	4 H4	
5 WSG	(I)			

=====	DESCRIPTION	=====
PROCESS		
MEMONOMIC		
10H0515		

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	ALL	NO		
	CALL	MRS	WAIT		
	GIVEN	TOS	PRI	\$REQNORE	
		36	H5	MSG	
	END				

LOCAL VARIABLES OF PROCESS TONOST6

41
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0

PAGE 17
 1 MRS (P) 2 T05 (P) 3 PRI 4 M5 (R)
 5 MSG (I)
 PROCESS
 WNEUMONIC
 TOHOST16

ENTRY OPCODE PARM PARM PARM COMMENT
 START ALL NO
 CALL MRS WAIT 0
 GIVEN T06 PRI SREQNORE
 36 H6 MSG
 END

LOCAL VARIABLES OF PROCESS TOHOST6
 1 MRS (P) 2 T06 (P) 3 PRI 4 M6 (R)
 5 MSG (I)
 PROCESS
 WNEUMONIC
 TRACE
 TURN ON TRACE OUTPUT

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

LOAD DEFINITION
 LOAD
 WNEUMONIC
 LOADH1
 DESCRIPTION
 THIS IS THE LOAD FOR HOST 1
 LOAD NODES
 H1

PROCESS	WNEUMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	UNITS	PRIORITY
TOHOST2	20	EXPONENT	1370	0	0	0	MSECONDS	0
TOHOST3	20	EXPONENT	1370	0	0	0	MSECONDS	0

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TOHOST4 20 EXPONENT 1370 0 MSECONDS 0
 TOHOST5 20 EXPONENT 1370 0 MSECONDS 0
 TOHOST6 20 EXPONENT 1370 0 MSECONDS 0

LOAD

MNEMONIC

LOADH2

DESCRIPTION

THIS IS THE LOAD FOR HOST 2

NODES

LOAD

H2

PROCESS	MNEMONIC	MAX #	SCHEDULE	MEAN	DELTA	UNITS	PRIORITY
TOHOST1	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST3	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST4	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST5	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST6	20	EXPONENT	1370	0	MSECONDS	0	

LOAD

MNEMONIC

LOADH3

DESCRIPTION

THIS IS THE LOAD FOR HOST 3

NODES

LOAD

H3

PROCESS	MNEMONIC	MAX #	SCHEDULE	MEAN	DELTA	UNITS	PRIORITY
TOHOST1	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST2	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST4	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST5	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST6	20	EXPONENT	1370	0	MSECONDS	0	

LOAD

MNEMONIC

LOADH4

DESCRIPTION

THIS IS THE LOAD FOR HOST 4

NODES

LOAD

H4

PROCESS	MNEMONIC	MAX #	SCHEDULE	MEAN	DELTA	UNITS	PRIORITY
TOHOST1	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST2	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST4	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST5	20	EXPONENT	1370	0	MSECONDS	0	
TOHOST6	20	EXPONENT	1370	0	MSECONDS	0	

TOHOST1	20	EXPONENT	1370	0	MSECONDS	0
TOHOST2	20	EXPONENT	1370	0	MSECONDS	0
TOHOST3	20	EXPONENT	1370	0	MSECONDS	0
TOHOST5	20	EXPONENT	1370	0	MSECONDS	0
TOHOST6	20	EXPONENT	1370	0	MSECONDS	0

LOAD

WNEUMONIC

DESCRIPTION

THIS IS THE LOAD FOR HOST 5

LOAD NODES

=====

HS

PROCESS	WNEUMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	UNITS	PRIORITY
TOHOST1	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST2	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST3	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST4	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST6	20	EXPONENT	1370	0	MSECONDS	0		

LOAD

WNEUMONIC

DESCRIPTION

THIS IS THE LOAD FOR HOST 6

LOAD NODES

=====

HS

PROCESS	WNEUMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	UNITS	PRIORITY
TOHOST1	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST2	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST3	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST4	20	EXPONENT	1370	0	MSECONDS	0		
TOHOST5	20	EXPONENT	1370	0	MSECONDS	0		

SCENARIO DEFINITION

WNEUMONIC

DESCRIPTION

===== 4

PERIOD

LENGTH

UNITS

OUTPUT

UNITS

PAGE 20

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS MSECONDS

PERI

TRIGGER TIME TO SCHEDULE SCHEDULE TRIGGER TIME TO SCHEDULE SCHEDULE
MSECONDS SCHEDULE UNITS PRIORITY MSECONDS SCHEDULE UNITS PRIORITY
LOADH1 0 MSECONDS 0 LOADH2 0 MSECONDS 0
LOADH3 0 MSECONDS 0 LOADH4 0 MSECONDS 0
LOADH5 0 MSECONDS 0 LOADH6 0 MSECONDS 0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

04/21/1987 10 27 49

TEST081 - RUN1

TEST THE USE OF VARIOUS AUT COMMANDS

PAGE 22

SIMULATION TIME = 15000 00000 MSEC ONDS

CONSTANT REPORT

CURRENT

CONSTANT VALUE

SECS_CHR 167 000

15000.00000 MSEC0NDS

=====

TOTAL		--VALUE--				
VARIABLE	SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
NUMBER	779	0.	0.	0.	0.	0.

=====

=====

PAGE 24

SIMULATION TIME = 15000.00000 MSECONDS

ITEM REPORT

ITEM NAME	NUMBER CREATED	NUMBER DESTR'D	MINIMUM	TIME IN SYSTEM			STD DEV...
				MAXIMUM	AVERAGE		
MSG	342	16	1008.00	12186.82	5741.02	3370.13	

STIMULATION TIME = 15000.00000 MSECONDS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
B1						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME						
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	68					
OUT OF BUSY	68					
# BUSY		0.	0.	0.	0.	1.000
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	68					
OUT OF WAIT	68					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

21-27

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
B1B2						
# IDLE		0.	0.002	0.047	0.	1.000
REQUEST TIME			6220.002	4008.191	0.	12226.422
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	8					
OUT OF BUSY	7					
# BUSY		1.000	0.998	0.047	0.	1.000
BUSY TIME			2016.000	+1.831E-04	2016.000	2016.000
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	65					
OUT OF WAIT	8					
# WAITING		57.000	25.365	18.261	0.	57.000

12228.422

CURRENTLY ALLOCATED
TO PROCESSES: CHANPROC

PROCESSES CURRENTLY
WAITING:

[illegible]

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM

#	TOLE	1.000	1.000	0.	1.000
REQUEST TIME			0.	0.	0.
HOLD TIME	0	0.	0.	0.	0.

INTO BUSY	65					
OUT OF BUSY	65	0.	0.	0.	0.	1.000
# BUSY		0.	0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.

INTO WAIT	85				
OUT OF WAIT	65				
# WAITING		0.	0.	0.	1.000
WAIT TIME		0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

```
PROCESSES CURRENTLY
WAITING: NONE
```

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
3283						

REQUEST TIME # IDLE 0. 0.015 0.120 0. 1.000
HOLD TIME 5873.100 3565.980 0. 11058.857
0. 0. 0. 0.
15 INTO BUSY 0.985 0.120 0. 1.000
14 OUT OF BUSY 1000.000 +1.449E-04 1000.000 1000.000
BUSY TIME 0. 0. 0. 0.
INACTIVE 0. 0. 0. 0.
61 INTO WAIT 24.736 12.822 0. 46.000
15 OUT OF WAIT 5873.100 3565.980 0. 11058.857
WAITING 46.000
WAIT TIME

CURRENTLY ALLOCATED TO PROCESSES: CHANPROC

PROCESSES CURRENTLY WAITING:
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC
CHANPROC CHANPROC CHANPROC CHANPROC CHANPROC

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

83 # IDLE 1.000 1.000 0. 0. 1.000
REQUEST TIME 0. 0. 0. 0. 0.
HOLD TIME 0. 0. 0. 0. 0.
75 INTO BUSY 0. 0. 0. 0. 1.000
75 OUT OF BUSY 0. 0. 0. 0. 0.
BUSY 0. 0. 0. 0. 0.
BUSY TIME 0. 0. 0. 0. 0.
INACTIVE 0. 0. 0. 0. 0.
75 INTO WAIT 0. 0. 0. 0. 1.000
75 OUT OF WAIT 0. 0. 0. 0. 0.
WAITING

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
B5						

# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.

INTO BUSY	58					
OUT OF BUSY	58	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.

# INACTIVE		0.	0.	0.	0.	0.

INTO WAIT	58					
OUT OF WAIT	58	0.	0.	0.	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
B5B6						

# IDLE		0.	0.005	0.069	0.	1.000
REQUEST TIME	0		4875.373	3066.636	0.	9049.678
HOLD TIME			0.	0.	0.	0.

INTO BUSY	15					
OUT OF BUSY	14	1.000	0.995	0.069	0.	1.000
# BUSY			1008.000	+3.192E-05	1008.000	1008.000
BUSY TIME						

PAGE 31 # INACTIVE

INTO WAIT	57
OUT OF WAIT	15
# WAITING	
WAIT TIME	

42.000	21.230	14.447	0.	42.000
	4875.373	3066.636	0.	9049.678

CURRENTLY ALLOCATED
TO PROCESSES: CHANPROC

PROCESSES CURRENTLY
WAITING:

[illegible]

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

86	# IDLE	1.000	1.000	0.	0.	1.000
	REQUEST TIME		0.	0.	0.	0.
	WORLD TIME	0.	0.	0.	0.	0.

[illegible]

# INACTIVE	0.	0.	0.	0.
INTO WAIT	80			
OUT OF WAIT	80			
# WAITING	0.	0.	0.	1.000
WAIT TIME	0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

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

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

1	# IDLE	0.	0.017	0.129	0.	1.000
	REQUEST TIME		5484.301	3198.891	0.	10747.311
	HOLD TIME	0	0.	0.	0.	0.
	INTO BUSY	15				
	OUT OF BUSY	14			0.	1.000
	# BUSY		0.983	0.129	0.	1.000
	BUSY TIME		1008.000	+0.730E-04	1008.000	1008.000
	# INACTIVE		0.	0.	0.	0.
	INTO WAIT	76				
	OUT OF WAIT	15			0.	61.000
	# WAITING		28.518	18.591	0.	61.000
	WAIT TIME		5484.301	3198.891	0.	10747.311

CURRENTLY ALLOCATED
TO PROCESSES: CHANPROC

PROCESSES CURRENTLY
WAITING:

[illegible]

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
BUFFER						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0					
# BUSY		0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.

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INACTIVE

0. 0. 0. 0.

INTO WAIT
OUT OF WAIT
WAITING
WAIT TIME

0.
0.
0.
0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
H1						

IDLE
REQUEST TIME
HOLD TIME

1.000 1.000 0. 0. 0. 1.000
0. 0. 0. 0.

INTO BUSY
OUT OF BUSY
BUSY
BUSY TIME

0. 0. 0. 0. 0. 1.000
0. 0. 0. 0.

INACTIVE
INTO WAIT
OUT OF WAIT
WAITING
WAIT TIME

0. 0. 0. 0. 0. 1.000
0. 0. 0. 0. 1.000
0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
H2						

IDLE
REQUEST TIME
HOLD TIME

1.000 1.000 0. 0. 0. 1.000
0. 0. 0. 0.

INTO BUSY
OUT OF BUSY

0. 0. 0. 0. 0. 1.000
68 68

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BUSY
BUSY TIME 0. 0. 0. 0. 0. 1.000

INACTIVE 0. 0. 0. 0. 0. 0.

INTO WAIT 68
OUT OF WAIT 68
WAITING 0. 0. 0. 0. 0. 1.000
WAIT TIME 0. 0. 0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

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

H3 # IDLE 1.000 1.000 0. 0. 0. 1.000
REQUEST TIME 0. 0. 0. 0. 0. 0.
HOLD TIME 0. 0. 0. 0. 0. 0.

INTO BUSY 63
OUT OF BUSY 63
BUSY 0. 0. 0. 0. 0. 1.000
BUSY TIME 0. 0. 0. 0. 0. 0.

INACTIVE 0. 0. 0. 0. 0. 0.

INTO WAIT 63
OUT OF WAIT 63
WAITING 0. 0. 0. 0. 0. 1.000
WAIT TIME 0. 0. 0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

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

H4 # IDLE 1.000 1.000 0. 0. 0. 1.000
REQUEST TIME 0. 0. 0. 0. 0. 0.
HOLD TIME 0. 0. 0. 0. 0. 0.

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INTO BUSY	65					
OUT OF BUSY	65	0.	0.	0.	0.	1.000
# BUSY		0.	0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	65					
OUT OF WAIT	65	0.	0.	0.	0.	1.000
# WAITING		0.	0.	0.	0.	0.
WAIT TIME						

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV.	MINIMUM...	MAXIMUM...
MS						
# IDLE		1.0000	1.0000	0.	0.	1.0000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	48					
OUT OF BUSY	48					
# BUSY		0.	0.	0.	0.	1.0000
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	48					
OUT OF WAIT	48					
# WAITING		0.	0.	0.	0.	1.0000
WAIT TIME			0.	0.	0.	0.

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
M6	==	==	==	==	==	==

18

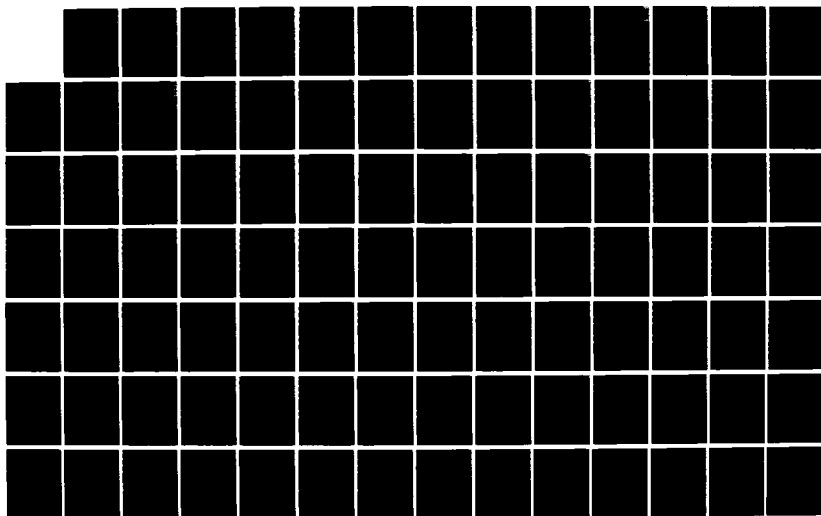
AD-A189 146

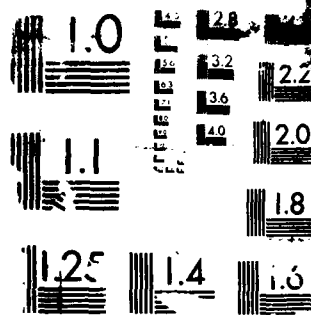
AUTOMATED INTERACTIVE SIMULATION MODEL (AISIM) VAX
VERSION 50 ACCEPTANCE. (U) HUGHES AIRCRAFT CO FULLERTON
CA GROUND SYSTEMS GROUP V ALLERTON ET AL. 29 APR 87
1854474-2 ESD-TR-87-226 F19628-86-C-0070 F/G 12/5

2/4

UNCLASSIFIED

NL





U.S. NAVY RESOLUTION TEST CHART

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RESOURCE	NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
=====						
H81_B						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	3					
OUT OF BUSY	3	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	3					
OUT OF WAIT	3	0.	0.	0.	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME						0.
CURRENTLY ALLOCATED TO PROCESSES: NONE						
PROCESSES CURRENTLY WAITING: NONE						

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
=====						
H82_A						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	58					
OUT OF BUSY	58	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	58					
OUT OF WAIT	58	0.	0.	0.	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME						0.
CURRENTLY ALLOCATED TO PROCESSES: NONE						
PROCESSES CURRENTLY WAITING: NONE						

WAITING: NONE

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

HB2_B # IDLE 1.000 1.000 0. 0. 1.000

REQUEST TIME 0 0. 0. 0. 0.

HOLD TIME 0 0. 0. 0. 0.

INTO BUSY 4 0. 0. 0. 1.000

OUT OF BUSY 4 0. 0. 0. 0.

BUSY 0. 0. 0. 0.

BUSY TIME 0. 0. 0. 0.

INACTIVE 0. 0. 0. 0.

INTO WAIT 4 0. 0. 0. 1.000

OUT OF WAIT 4 0. 0. 0. 0.

WAITING 0. 0. 0. 0.

WAIT TIME 0. 0. 0. 0.

CURRENTLY ALLOCATED TO PROCESSES: NONE

PROCESSES CURRENTLY WAITING: NONE

A-40

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

HB3_A # IDLE 1.000 1.000 0. 0. 1.000

REQUEST TIME 0 0. 0. 0. 0.

HOLD TIME 0 0. 0. 0. 0.

INTO BUSY 61 0. 0. 0. 1.000

OUT OF BUSY 61 0. 0. 0. 0.

BUSY 0. 0. 0. 0.

BUSY TIME 0. 0. 0. 0.

INACTIVE 0. 0. 0. 0.

INTO WAIT 61 0. 0. 0. 1.000

OUT OF WAIT 61 0. 0. 0. 0.

WAITING 0. 0. 0. 0.

WAIT TIME 0. 0. 0. 0.

CURRENTLY ALLOCATED

PAGE 39 TO PROCESSES: NONE
 PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
HB3_B						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	1					
OUT OF BUSY	1	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	1					
OUT OF WAIT	1	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
HB4_A						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	59					
OUT OF BUSY	59	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	59					
OUT OF WAIT	59	0.	0.	0.	0.	1.000
# WAITING						

PAGE 40 WAIT TIME 0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE
PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
HB4_B						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	3					
OUT OF BUSY	3	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
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...
HB5_A						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	44					
OUT OF BUSY	44	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.

INTO WAIT 44
OUT OF WAIT 44

WAITING 0. 0. 0. 0. 1.000
WAIT TIME 0. 0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
HB5_B						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	1					
OUT OF BUSY	1	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	1					
OUT OF WAIT	1	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...
HB6_A						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	00					
OUT OF BUSY	00	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						

INACTIVE 0. 0. 0. 0. 0.
 INTO WAIT 66
 OUT OF WAIT 66
 # WAITING 0. 0. 0. 0. 1.000
 WAIT TIME 0. 0. 0. 0. 0.

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

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

H86_8
 # IDLE 1.000 1.000 0. 0. 1.000
 REQUEST TIME 0. 0. 0. 0. 0.
 HOLD TIME 0. 0. 0. 0. 0.

INTO BUSY 4
 OUT OF BUSY 4
 # BUSY 0. 0. 0. 0. 1.000
 BUSY TIME 0. 0. 0. 0. 0.

INACTIVE 0. 0. 0. 0. 0.
 INTO WAIT 4
 OUT OF WAIT 4
 # WAITING 0. 0. 0. 0. 1.000
 WAIT TIME 0. 0. 0. 0. 0.

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

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SIMULATION TIME = 15000.00000 MILLISECONDS

ACTION REPORT

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

USEFUL TIME	0	0.	0.	0.	0.	0.
DELAY TIME	0	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

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

USEFUL TIME	777	0.	0.	0.	0.	0.
DELAY TIME	777	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

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

USEFUL TIME	435	194.648	437.057	0.	2010.000	504.480
DELAY TIME	435	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

SIMULATION TIME = 15000.00000 MSECONDS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
CHAMPROC						
TOTAL	50	198920.311	3978.406	3855.447	0.	12186.823
PROCESS WAIT	50	107063.942	2141.279	3453.351	0.	12186.823
RESOURCE WAIT	441	460933.229	1058.806	2676.740	0.	12226.422

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	SCHEDULE	SCHEDULE	COMPLETE	COMPLETE	SUSPEND.
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20
21	21	21	21	21	21
22	22	22	22	22	22
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
31	31	31	31	31	31
32	32	32	32	32	32
33	33	33	33	33	33
34	34	34	34	34	34
35	35	35	35	35	35
36	36	36	36	36	36
37	37	37	37	37	37
38	38	38	38	38	38
39	39	39	39	39	39
40	40	40	40	40	40
41	41	41	41	41	41
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67	67	67	67	67
68	68	68	68	68	68
69	69	69	69	69	69
70	70	70	70	70	70
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74	74				

761	0	761	50	711	0
761	0	761	50	711	0

ITEM	CREATED	RECEIVED	SENT	DESTR'D
MSC				

ITEM	PROCESS	HOLDING	TIME						
	#	SWPLS	MEAN		MINIMUM	..	MAXIMUM	...	STD DEV
MSC	435		1114.01		0.		12711.27		2771.15

PROCESS	DESCRIPTION

=====		FULL AND HALF DUPLEX CHANNEL LOGIC				=====	
CHANPROC	ENTRY	OPCODE	PARM	PARM	COMMENT		
761	START	ALL	NO				
761	GIVEN	MSG					
761	ASSIGN	MSG	CNODE		SET INTERNAL NODE CURRENT		
761		\$CNODE					
761	ASSIGN	MSG	TNODE		GET DESTINATION NODE		
761		TO NODE					
761	ASSIGN	\$NXTNODE	TO_NODE		SET NEXT NODE TO DESTN		
761		NXT NODE					
761	ASSIGN	\$CHANNEL	TO_NODE		GET CHANNEL TO NEXT NODE		
761		CHANNEL					
761	ALLOC	CHANNEL	1	ALL			
761		\$PRIORITY					
441	ASSIGN	CHANNEL	RATE		WHAT IS CHANNEL RATE?		
441		VSPEED					
441	ASSIGN	MSG	LENGTH		MESSAGE LENGTH		
441		VLENGTH					


```

441  VSPEED  *  VLENGTH
441  COMPARE  VSPEED  NE
441  167  AHD
358  ASSIGN  0
358  VM_OVHD
441  ENTRY
441  XFER_OH  CONSTANT VM OVHD
441  MSECNDOS RESUME
435  ASSIGN  NXT NODE
435  MSG_ CNODE
435  ASSIGN  NXT NODE
435  $CNODE
435  DEALLOC  CHANNEL 1
435  CALL  NODEPROC WAIT 0
435  GIVEN  MSG
435  END
50

```

DELAY DUE TO TRANSFER TIME
 MSG RESIDES IN NEXT NODE
 SET INTERNAL NODE REGISTER
 FREE UP CHANNEL AFTER XFER
 ROUTE MESSAGE TO NEXT NODE

```

=====
PROCESS  TOTAL  SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
DESTRPROC
=====
PROCESS WAIT 16 0. 0. 0. 0. 0.
RESOURCE WAIT 16 0. 0. 0. 0. 0.
=====

```

```

=====
TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
16 0 16 16 0 0
=====

```

```

=====
ITEM  CREATED  RECEIVED SENT  DESTR'D
=====
MSG  0  0  0  16
=====

```

```

=====
PROCESS HOLDING TIME
ITEM  # SMPLS  MEAN..... MINIMUM.. MAXIMUM.. STD DEV...
=====
MSG  32  0. 0. 0. 0.
=====

```

```

=====
PROCESS  DESCRIPTION
=====
DESTRPROC  PROCESSING AT DESTINATION OF MESSAGE
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
16  START  ALL  NO
16  GIVEN  MSG
16  ASSIGN  MSG  CNODE  CURRENT NODE
=====

```

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
MRS						
TOTAL	16	91856.370	5741.023	3370.131	1008.000	12186.823
PROCESS WAIT	16	91856.370	5741.023	3370.131	1008.000	12186.823
RESOURCE WAIT	0	0	0	0	0	0
TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES	
SCHEDULE	SCHEDULE	SCHEDULE	COMPLETE	COMPLETE	SUSPEND	
342	0	342	16	326	0	
ITEM	CREATED	RECEIVED	SENT	DESTR'D		
MSG	342	0	0	0		
ITEM	# SMPLS	PROCESS	HOLDING	TIME	MINIMUM	MAXIMUM

A-48

PAGE 47 MSG 342 0. 0. 0. 0.

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

COUNT ENTRY OPCODE PARM PARM PARM COMMENT
===== START ALL NO =====
342 GIVEN PROCESS PRIORITY MSG TYPE
342 MSG MSG_LNTH TO_NODE MSG_
342 CREATE MSG_
342 ASSIGN MSG_LNTH LENGTH
342 ASSIGN PROCESS RPROC
342 ASSIGN PRIORITY RPROC PRI
342 ASSIGN TO_NODE TNODE
342 ASSIGN MSG_TYPE TYPE
342 CALL NODEPROC WAIT 0 EXECUTIVE SERVICING OF MSG
342 GIVEN MSG
342 END
16

PROCESS TOTAL
===== SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM. =====
NODEPROC
TOTAL 66 198920.311 3013.944 3764.014 0. 12186.823
PROCESS WAIT 66 198920.311 3013.944 3764.014 0. 12186.823
RESOURCE WAIT 777 0. 0. 0. 0. 0.

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.
===== 777 0 777 66 711 0 =====

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

PROCESS HOLDING TIME
ITEM # SMPLS MEAN. MINIMUM. MAXIMUM. STD DEV.
===== 777 0. 0. 0. 0. =====
MSG

PROCESS DESCRIPTION

```

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=====
===== NODAL PROCESSING AND ROUTING =====
=====
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====
777 START ALL NO
777 GIVEN MSG
777 ASSIGN MSG CNODE INDICATE CURRENT NODE
777 C NODE C NODE PROCESSING RATE OF NODE
777 ASSIGN C NODE M_ROUTE GET MESSAGE LENGTH
777 ASSIGN RT OVHD LENGTH COMPUTE PROCESSING DELAY
777 MSG MSG LENGTH SAMPLE OVERHEAD FOR PLOT
777 MSG LNTH
777 OVERHEAD MSG LNTH RT OVHD
777 ASSIGN OVERHEAD V ROUTER
777 ALLDC C NODE 1 ALL
777 $PRIORITY
777 ROUTE_OH CONSTANT OVERHEAD DELAY FOR ROUTING
777 MSECNDS RESUME
777 DEALLOC C NODE 1
777 COMPARE MSG CNODE EQ
777 CALL MSG TNODE CONTROL
761 CHANPROC WAIT 0 FORWARD MSG TO CHANNEL
761 GIVEN MSG
761 BRANCH END 100
50 CONTROL
16 ENTRY DESTPROC WAIT 0 MESSAGE AT DESTINATION
16 CALL CONTEXT SWITCH MESSAGE
16 GIVEN
66 ENTRY
68 END
=====

```

```

=====
PROCESS TOTAL
SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
T01
TOTAL 3 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.
=====
3 0 3 3 0 0
=====
ITEM CREATED RECEIVED SENT DESTR'D
=====
MSG 0 0 0 0
=====

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN... MINIMUM... MAXIMUM... STD DEV...
=====
MSG 3 0. 0. 0. 0.

```

PROCESS DESCRIPTION

```

T01
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====
3 START ALL NO
3 GIVEN MSG
3 RETURN MSG
3 END

```

```

TOTAL
SAMPLES. SUM. MEAN... STD DEV... MINIMUM... MAXIMUM...
=====
T02 4 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.
=====
4 0 4 4 0 0

```

```

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

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN... MINIMUM... MAXIMUM... STD DEV...
=====
MSG 4 0. 0. 0. 0.

```

PROCESS DESCRIPTION

```

T02
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====
4 START ALL NO
4 GIVEN MSG
4 RETURN MSG
4 END

```

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

T03
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 0 1 1 0 0

ITEM CREATED RECEIVED SENT DESTR'D

MSG 0 0 0 0

PROCESS HOLDING TIME

ITEM # SMPLS MEAN MINIMUM MAXIMUM STD DEV
=====

MSG 1 0. 0. 0. 0.

PROCESS DESCRIPTION

T03

COUNT ENTRY OPCODE PARM PARM PARM COMMENT

1 START ALL NO
1 GIVEN MSG
1 RETURN MSG
1 END

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

T04
TOTAL 3 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.
=====

3 0 3 3 0 0

ITEM CREATED RECEIVED SENT DESTR'D

=====

MSG 0 0 0 0 0
PROCESS HOLDING TIME
ITEM # SMPLS MEAN... MINIMUM... MAXIMUM... STD DEV...
MSG 3 0. 0. 0. 0.
PROCESS DESCRIPTION
=====

T04
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====

TOTAL
PROCESS SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
T05
PROCESS WAIT 1 0. 0. 0. 0. 0.
RESOURCE WAIT 0 0. 0. 0. 0. 0.
TOTAL # AUTO # CALL # OF # NOT
SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====

ITEM CREATED RECEIVED SENT DESTR'D
MSG 0 0 0 0
PROCESS HOLDING TIME
ITEM # SMPLS MEAN... MINIMUM... MAXIMUM... STD DEV...
MSG 1 0. 0. 0. 0.

PROCESS DESCRIPTION
=====

T05
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====

END

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

T06
TOTAL 4 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.
=====

4 0 4 4 0 0

ITEM CREATED RECEIVED SENT DESTROY
=====

MSG 0 0 0 0

PROCESS HOLDING TIME
SMPLS MEAN. MINIMUM. MAXIMUM. STD DEV.
=====

MSG 4 0. 0. 0. 0.

PROCESS DESCRIPTION
=====

T06

COUNT	ENTRY	OPCODE	PARAM	PARAM	COMMENT
4	START	ALL			NO
4	GIVEN	MSG			
4	RETURN	MSG			
4	END				

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

T06
TOTAL 3 19470.120 6490.040 3594.188 1662.747 10282.170
PROCESS WAIT 3 19470.120 6490.040 3594.188 1662.747 10282.170
RESOURCE WAIT 0 0. 0. 0. 0. 0.

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

46 46 0 3 43 0

PROCESS DESCRIPTION

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=====

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
48	START	ALL	NO			
46	CALL	MRS	WAIT			
46	GIVEN	T01	PRI			\$REQNORE
46		36	H1			MSG
3	END					

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOST1							
TOTAL	4	26057.603	6514.401	1925.681	3957.260	9089.472	
PROCESS WAIT	4	26057.603	6514.401	1925.681	3957.260	9089.472	
RESOURCE WAIT	0	0.	0.	0.	0.	0.	

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

=====

PROCESS DESCRIPTION

=====

TOHOST2

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
55	START	ALL	NO			
55	CALL	MRS	WAIT			
55	GIVEN	T02	PRI			\$REQNORE
55		36	H2			MSG
4	END					

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOST3							
TOTAL	1	4886.563	4886.563	0.	4886.563	4886.563	
PROCESS WAIT	1	4886.563	4886.563	0.	4886.563	4886.563	
RESOURCE WAIT	0	0.	0.	0.	0.	0.	

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

=====

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PROCESS DESCRIPTION
=====

TOHOST3

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
62	START	ALL	NO			
62	CALL	WRS	WAIT	0		
62	GIVEN	T03	PRI			
62		36	H3			
1	END					

=====

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOST4							
TOTAL	3	21133.598	7044.532	4182.631	1941.740	12186.823	
PROCESS WAIT	3	21133.598	7044.532	4182.631	1941.740	12186.823	
RESOURCE WAIT	0	0	0	0	0	0	

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

57 57 0 3 54 0

PROCESS DESCRIPTION
=====

TOHOST4

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
57	START	ALL	NO			
57	CALL	WRS	WAIT	0		
57	GIVEN	T04	PRI			
57		36	H4			
3	END					

=====

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOST5							
TOTAL	1	2419.557	2419.557	0	2419.557	2419.557	
PROCESS WAIT	1	2419.557	2419.557	0	2419.557	2419.557	
RESOURCE WAIT	0	0	0	0	0	0	

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

63 63 0 1 62 0

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PROCESS DESCRIPTION

TOHOSTS

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
63	START	ALL	NO			
63	CALL	MRS	WAIT	0		
63	GIVEN	TOS	PRI	3REQNORE		
63		36	H5	MSG		
1	END					

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOST6							
TOTAL	4	18088.932	4522.233	3478.327	1008.000	8726.711	
PROCESS WAIT	4	18088.932	4522.233	3478.327	1008.000	8726.711	
RESOURCE WAIT	0	0	0	0	0	0	
TOTAL #	4	18088.932	4522.233	3478.327	1008.000	8726.711	
PROCESS WAIT	4	18088.932	4522.233	3478.327	1008.000	8726.711	
RESOURCE WAIT	0	0	0	0	0	0	

TOTAL # 4 AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND

PROCESS DESCRIPTION

TOHOST6

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
59	START	ALL	NO			
59	CALL	MRS	WAIT	0		
59	GIVEN	TOS	PRI	3REQNORE		
59		36	H6	MSG		
4	END					

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TRACE							
TOTAL	0	0	0	0	0	0	
PROCESS WAIT	0	0	0	0	0	0	
RESOURCE WAIT	0	0	0	0	0	0	
TOTAL #	0	0	0	0	0	0	
PROCESS WAIT	0	0	0	0	0	0	
RESOURCE WAIT	0	0	0	0	0	0	

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

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PROCESS DESCRIPTION

TRACE TURN ON TRACE OUTPUT

COUNT ENTRY OPCODE PARM PARM PARM COMMENT

0 START ALL NO

0 TRACE ON

0 TRACE ON

0 END

APPENDIX A

Results Verification for

TESTDB1.DBF - Run 2

07/21/1997 10:34:24

TEST081 - RUN2

SECOND RUN WITH CHANGED VALUE OF SECS_CHR

PAGE 20

STIMULATION TIME 15000 000000 USECONDS

CONSTANT REPORT

CURRENT

CONSTANT VALUE

SECS_CHR 150 000

SIMULATION TIME 15000 00000 MSECONDS

VARIABLE REPORT

NUMERIC VARIABLES

		---VALUE---				
TOTAL						
VARIABLE	SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
V_ROUTER	386	0.	0.	0.	0.	0.

NON-NUMERIC VARIABLES

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

PAGE 04

SIMULATION TIME = 15000 00000 MSECONDS

ITEM REPORT

ITEM	NUMBER	NUMBER	TIME IN SYSTEM	STD DEV...
NAME	CREATED	DEST'D	MAXIMUM...	AVERAGE...
=====	=====	=====	=====	=====
MSG	342	2	11808.00	12816.00
			13824.00	1008.00

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
B1						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	6					
OUT OF BUSY	6					
# BUSY		0.	0.	0.	0.	1.000
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	6					
OUT OF WAIT	6					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

5-15

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
B1B2						
# IDLE		0.	0.	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	3					
OUT OF BUSY	3					
# BUSY		0.	0.403	0.508	0.	2.000
BUSY TIME			2016.000	0.	2016.000	2016.000
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	3					
OUT OF WAIT	3					
# WAITING		0.	0.	0.	0.	1.000

WAIT TIME

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
B2						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	5					
OUT OF BUSY	5	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	5					
OUT OF WAIT	5	0.	0.	0.	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
B2B3						
# IDLE		0.	0.	0.	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	4					
OUT OF BUSY	4	0.	0.269	0.443	0.	1.000
# BUSY			1008.000	+2.114E-04	1008.000	1008.000
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.

INTO WAIT 4
 OUT OF WAIT 4
 # WAITING 0.
 WAIT TIME 0. 1.000 0.
 0. 0.

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
=====	=====	=====	=====	=====	=====	=====
B3						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	8					
OUT OF BUSY	6	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	6					
OUT OF WAIT	6	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...
=====	=====	=====	=====	=====	=====	=====
B3B4						
# IDLE		1.000	0.597	0.491	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	6					
OUT OF BUSY	6	0.	0.403	0.491	0.	1.000
# BUSY			1008.000	0.	1008.000	1008.000
BUSY TIME						

```

# INACTIVE          0.      0.      0.      0.
  INTO WAIT         6
  OUT OF WAIT        6
  # WAITING          0.      0.      0.      1.000
  WAIT TIME         0.      0.      0.      0.

```

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

```

TOTAL
RESOURCE  NUMBER  CURRENT...  MEAN...  STD DEV...  MINIMUM...  MAXIMUM...
=====
B4  # IDLE      1.000      1.000      0.      0.      1.000
    REQUEST TIME  0.      0.      0.      0.
    HOLD TIME    0.      0.      0.      0.
  INTO BUSY      8
  OUT OF BUSY    8
  # BUSY         0.      0.      0.      1.000
  BUSY TIME      0.      0.      0.      0.
  # INACTIVE     0.      0.      0.      0.
  INTO WAIT      8
  OUT OF WAIT    8
  # WAITING      0.      0.      0.      1.000
  WAIT TIME      0.      0.      0.      0.

```

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

```

TOTAL
RESOURCE  NUMBER  CURRENT...  MEAN...  STD DEV...  MINIMUM...  MAXIMUM...
=====
B4B5  # IDLE      1.000      0.597      0.491      0.      1.000
      REQUEST TIME  0      122.695      274.132      0.      736.672
      HOLD TIME    0.      0.      0.      0.
  INTO BUSY      6

```

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OUT OF BUSY	6								
# BUSY		0.	0.403	0.491	0.	1.000	1008.000	1008.000	1.000
BUSY TIME			1008.000	+1.820E-04					
# INACTIVE		0.	0.	0.	0.	0.			0.
INTO WAIT	6								
OUT OF WAIT	6								
# WAITING		0.	0.049	0.216	0.	1.000			
WAIT TIME			122.595	274.132	0.				735.572

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
BS						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.		
INTO BUSY	8					
OUT OF BUSY	8					
# BUSY		0.	0.	0.	0.	1.000
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	8					
OUT OF WAIT	8					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
BS86						
# IDLE		1.000	0.697	0.491	0.	1.000
REQUEST TIME			0.	0.	0.	0.

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RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
# IDLE	0	0	0	0	0	0
REQUEST TIME	6	6	0.403	0.491	0	1.000
HOLD TIME	6	6	1008.000	+1.820E-04	1008.000	1008.000
# INACTIVE	0	0	0	0	0	0
INTO WAIT	6	6	0	0	0	1.000
OUT OF WAIT	6	6	0	0	0	0
# WAITING	0	0	0	0	0	0
WAIT TIME	0	0	0	0	0	0

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE

TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
# IDLE	1.000	1.000	0	0	1.000
REQUEST TIME	0	0	0	0	0
HOLD TIME	0	0	0	0	0
INTO BUSY	8	8	0	0	1.000
OUT OF BUSY	8	8	0	0	0
# BUSY	0	0	0	0	0
BUSY TIME	0	0	0	0	0
# INACTIVE	0	0	0	0	0
INTO WAIT	8	8	0	0	1.000
OUT OF WAIT	8	8	0	0	0
# WAITING	0	0	0	0	0
WAIT TIME	0	0	0	0	0

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE

TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
# IDLE	1.000	1.000	0	0	1.000
REQUEST TIME	0	0	0	0	0
HOLD TIME	0	0	0	0	0
INTO BUSY	8	8	0	0	1.000
OUT OF BUSY	8	8	0	0	0
# BUSY	0	0	0	0	0
BUSY TIME	0	0	0	0	0
# INACTIVE	0	0	0	0	0
INTO WAIT	8	8	0	0	1.000
OUT OF WAIT	8	8	0	0	0
# WAITING	0	0	0	0	0
WAIT TIME	0	0	0	0	0

```

# IDLE
REQUEST TIME 1.000 0.731 0.443 0. 1.000
HOLD TIME 0. 0. 0. 0. 0.

INTO BUSY 4
OUT OF BUSY 4
# BUSY 0. 0.269 0.443 0. 1.000
BUSY TIME 1008.000 1008.000 1008.000

# INACTIVE 0. 0. 0. 0. 0.

INTO WAIT 4
OUT OF WAIT 4
# WAITING 0. 0. 0. 0. 1.000
WAIT TIME 0. 0. 0. 0. 0.

```

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

```

TOTAL
RESOURCE NUMBER CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...
=====
BUFFER 1.000 1.000 0. 1.000 0. 1.000

# IDLE
REQUEST TIME 0. 1.000 0. 1.000 1.000
HOLD TIME 0. 0. 0. 0. 0.

INTO BUSY 0
OUT OF BUSY 0
# BUSY 0. 0. 0. 0. 0.
BUSY TIME 0. 0. 0. 0. 0.

# INACTIVE 0. 0. 0. 0. 0.

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

```

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

PAGE 2

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

#1
IDLE 1 000 1.000 0. 0. 1.000
REQUEST TIME 0. 0. 0.
HOLD TIME 0. 0. 0.

INTO BUSY 56
OUT OF BUSY 56 0. 0. 0. 1.000
BUSY 0. 0. 0. 0.
BUSY TIME 0. 0. 0.

INACTIVE 0. 0. 0. 0.
INTO WAIT 56
OUT OF WAIT 56 0. 0. 0. 1.000
WAITING 0. 0. 0. 0.
WAIT TIME 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

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

#2
IDLE 1 000 1.000 0. 0. 1.000
REQUEST TIME 0. 0. 0.
HOLD TIME 0. 0. 0.

INTO BUSY 58
OUT OF BUSY 58 0. 0. 0. 1.000
BUSY 0. 0. 0. 0.
BUSY TIME 0. 0. 0.

INACTIVE 0. 0. 0. 0.
INTO WAIT 58
OUT OF WAIT 58 0. 0. 0. 1.000
WAITING 0. 0. 0. 0.
WAIT TIME 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
H3						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	61					
OUT OF BUSY	61	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	61					
OUT OF WAIT	61	0.	0.	0.	0.	1.000
# WAITING						0.
WAIT TIME						

CURRENTLY ALLOCATED TO PROCESSES: NONE

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
H4						
# IDLE		1.000	1.000	0.	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	59					
OUT OF BUSY	59	0.	0.	0.	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	59					
OUT OF WAIT	59	0.	0.	0.	0.	1.000
# WAITING						0.
WAIT TIME						

CURRENTLY ALLOCATED: NONE

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
H5						
# IDLE		1 000	1.000	0.	0.	1.000
REQUEST TIME		0	0.	0.	0.	0.
HOLD TIME	0	0	0	0	0	0
INTO BUSY	44					
OUT OF BUSY	44					
# BUSY		0	0	0	0	1.000
BUSY TIME		0	0.	0.	0.	0.
# INACTIVE		0	0	0	0	0.
INTO WAIT	44					
OUT OF WAIT	44					
# WAITING		0	0.	0.	0	1.000
WAIT TIME		0	0	0	0	0

CURRENTLY ALLOCATED TO PROCESSES: NONE

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
H6						
# IDLE		1 000	1.000	0.	0	1.000
REQUEST TIME		0	0.	0.	0.	0.
HOLD TIME	0	0	0	0	0	0.
INTO BUSY	68					
OUT OF BUSY	68					
# BUSY		0	0	0	0	1.000
BUSY TIME		0	0	0	0	0
# INACTIVE		0	0	0	0	0.
INTO WAIT	68					
OUT OF WAIT	68					

CURRENTLY ALLOCATED
TO PROCESSES

PROCESSES CURRENTLY
WAITING

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
HB1_A						
# IN USE		0	0 002	0 047	0	1 000
REQUEST TIME			5223 621	4224 186	0	10345 003
# WAITING	0		0	0	0	0
INTO BUSY	3					
OUT OF BUSY	2					
# BUSY		1 000	0 998	0 047	0	1 000
BUSY TIME			5400 000 +3 052E 04	5400 000	5400 000	5400 000
# INACTIVE		0	0	0	0	0
INTO WAIT	54					
OUT OF WAIT	3					
# WAITING		51 000	22 368	14 305	0	51 000
WAIT TIME			6223 621	4224 186	0	10345 003

CURRENTLY ALLOCATED
TO PROCESSES

PROCESSES CURRENTLY
WAITING

CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC
CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC	CHANPROC

CURRENTLY ALLOCATED
TO PROCESSES

PROCESSES CURRENTLY
WAITING

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
HB1_B						

[illegible]

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
HB2_B						
# IDLE REQUEST TIME	0	0	0.857	0.350	0	1.000
INTD BUSY	1					
OUT OF BUSY	0	1.000	0.143	0.350	0	1.000
# BUSY			0	0	0	0
BUSY TIME						
# INACTIVE		0	0	0	0	0
INTD WAIT	1					
OUT OF WAIT	1	0	0	0	0	1.000
# WAITING			0	0	0	0
WAIT TIME						

CURRENTLY ALLOCATED
TO PROJECTS: CHANPROC

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
HB3_A						
# IDLE		0.	0.013	0.112	0.	1.000
REQUEST TIME			5343.644	4370.395	0.	10705.193
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	3					
OUT OF BUSY	2					
# BUSY	1.000		0.987	0.112	0.	1.000
BUSY TIME			5400.000	+3.439E-04	5400.000	5400.000

[illegible]

CURRENTLY ALLOCATED
TO PROCESSES: CHANPROC

PROCESSES CURRENTLY
WAITING:

[illegible]

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM

HB3_B		# IDLE	1.000	1.000	0.	1.000	1.000
REQUEST TIME				0.	0.	0.	0.
HOLD TIME				0.	0.	0.	0.
	0	0	0	0	0	0	0.

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

[illegible]

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY WAITING: NONE


```

# INACTIVE          0.          0.          0.          0.
  INTO WAIT          ?
  OUT OF WAIT        1
  # WAITING          0.131      0.337      0.      1.000
  WAIT TIME          0.          0.          0.          0.

```

CURRENTLY ALLOCATED
TO PROCESSES: CHANPROC

PROCESSES CURRENTLY
WAITING: CHANPROC

```

TOTAL
RESOURCE      NUMBER  CURRENT... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
H85_A
# IDLE          0.          0.005      0.069      0.      1.000
REQUEST TIME    0
HOLD TIME      0
  INTO BUSY      3
  OUT OF BUSY    2
  # BUSY         1.000      4787.326  4009.084      0.      9811.628
  BUSY TIME      0
# INACTIVE      0.          0.          0.          0.
  INTO WAIT      44
  OUT OF WAIT    3
  # WAITING      41.000      21.196     13.985      0.      41.000
  WAIT TIME      0

```

CURRENTLY ALLOCATED
TO PROCESSES: CHANPROC

PROCESSES CURRENTLY
WAITING:

```

CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC
CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC
CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC
CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC
CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC
CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC  CHANPROC

```

TOTAL

PAGE 41
 RESOURCE
 HB5_B

RESOURCE	NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
# IDLE		0.	0.698	0.459	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	1					
OUT OF BUSY	0	1.000	0.302	0.459	0.	1.000
# BUSY			0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	2					
OUT OF WAIT	1	1.000	0.220	0.414	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED TO PROCESSES: CHANPROC

PROCESSES CURRENTLY WAITING: CHANPROC

RESOURCE
 HB6_A

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
# IDLE		0.	0.017	0.129	0.	1.000
REQUEST TIME			5132.563	4228.190	0.	10350.942
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	3					
OUT OF BUSY	2	1.000	0.983	0.129	0.	1.000
# BUSY			5400.000	40863E-04	5400.000	5400.000
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	66					
OUT OF WAIT	3	63.000	29.984	18.931	0.	63.000
# WAITING			5132.563	4228.190	0.	10350.942
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED TO PROCESSES: CHANPROC

PROCESSES CURRENTLY WAITING: CHANPROC

SIMULATION TIME = 15000.00000 MSEC ONDS

ACTION REPORT

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

USEFUL TIME	0	0.	0.	0.	0.	0.
DELAY TIME	0	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

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

USEFUL TIME	385	0.	0.	0.	0.	0.
DELAY TIME	385	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

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

USEFUL TIME	43	2508.279	2024.946	1008.000	5400.000	719.040
DELAY TIME	43	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

STIMULATION TIME = 15000.000000 MILLISECONDS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
CHANPROC	8	65088.000	8136.000	2902.190	5400.000	13824.000
PROCESS WAIT	8	39456.000	4932.000	2996.013	0.	8424.000
RESOURCE WAIT	54	100277.981	1857.000	3440.713	0.	10787.404

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	SCHEDULE	SCHEDULE	COMPLETE	COMPLETE	SUSP.
=====	=====	=====	=====	=====	=====
341	0	383	8	375	0
=====	=====	=====	=====	=====	=====

```

ITFW      CREATED      RECEIVED SENT      DESTR'D
=====
VSC      0      0      0      0

```

ITEM	#	PROCESS		HOLDING		TIME		MAXIMUM...	STD DEV...
		SMPLS	MEAN...	MEAN...	MINIMUM..	MINIMUM..			
NSC	43		3240.92		1008.00		10770.23	3368.01	

PROCESS	DESCRIPTION
CHANPROC	FULL AND HALF DUPLEX CHANNEL LOGIC
COUNT	ENTRY
383	OPCODE
383	START
383	GIVEN
383	ASSIGN
383	MSG
383	\$CNODE
383	ASSIGN
383	TO NODE
383	\$NXTNODE
383	NXT NODE
383	ASSIGN
383	\$CHANNEL
383	CHANNEL
383	ALLOC
383	\$PRIORITY
383	CHANNEL
54	VSPEED
54	ASSIGN
54	MSG
54	VLENGTH
	PARAM
	NO
	CNODE
	TNODE
	TO NODE
	TO NODE
	TO NODE
	TO NODE
	1
	RATE
	LENGTH
	WHAT IS CHANNEL RATE?
	MESSAGE LENGTH
	COMMENT
	SET INTERNAL NODE CURRENT
	GET DESTINATION NODE
	SET NEXT NODE TO DESTN
	GET CHANNEL TO NEXT NODE

PAGE 45

```

=====
54  EVAL          VM OVHD      VLENGTH
54  COMPARE      VSPED      NL
54  187
54  ASSIGN      0
54  VM OVHD
54  ENTRY
54  XFER_OH      CONSTANT VM OVHD
54  MSECNDNS RESUME
54  ASSIGN      NXT NODE
54  MSG_         CNODE
54  ASSIGN      NXT NODE
54  $CNODE
54  DEALLOC      CHANNEL 1
54  CALL         NODEPROC WAIT 0
54  GIVEN      MSG
54  END
=====

```

CALCULATE TRANSFER TIME

DELAY DUE TO TRANSFER TIME
 MSG RESIDES IN NEXT NODE
 SET INTERNAL NODE REGISTER
 FREE UP CHANNEL AFTER XFER
 ROUTE MESSAGE TO NEXT NODE

```

=====
PROCESS          TOTAL          SUM          MEAN          STD DEV... MINIMUM... MAXIMUM...
DESTRPROC
=====
TOTAL          2          0.          0.          0.          0.
PROCESS WAIT    2          0.          0.          0.          0.
RESOURCE WAIT   2          0.          0.          0.          0.
=====

```

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

```

=====
ITEM          CREATED RECEIVED SENT DESTR'D
=====
MSG          0          0          0          2
=====

```

```

=====
ITEM          PROCESS HOLDING TIME
MSG          # SMPLS MEAN... MINIMUM... MAXIMUM... STD DEV...
=====
4          0.          0.          0.          0.
=====

```

```

=====
PROCESS          DESCRIPTION
DESTRPROC
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
2          START  ALL  NO
2          GIVEN  MSG  CNODE
2          ASSIGN  MSG  CNODE
=====

```

2	COMPARE	C NODE	TYPE	EQ	IF RESPONSE, DESTROY
2	MSG	3KLS	1	DESTROY	
2	ALLOC	C NODE		ALL	
2	ASSIGN	MSG	RPROC		EXECUTE THE CALLED PROCESS
2	ASSIGN	MSG	RPROC		SET PRIORITY FOR REQ PROC
2	CALL	PRIORITY	WAIT		PRIORITY WAIT UNTIL COMPLETE
2	GIVEN	MSG			
2	RETURN	MSG			
2	DEALLOC	C NODE	1		DEALLOCATE CURRENT NODE
2	COMPARE	MSG	TYPE	EQ	NO RESPONSE REQ -> DESTROY
2	ASSIGN	REQ		DESTROY	CHANGE MSG RESPONSE TYPE
2	ASSIGN	MSG	FNODE		SWITCH FROM AND TO NODES
2	ASSIGN	MSG	FNODE		CURRENT NODE IS FROM NODE
2	CALL	CHANPROC	WAIT	0	RETURN MESSAGE TO ORIGIN
2	GIVEN	MSG			
2	BRANCH	END	100		TERMINATE MESSAGE AT DEST
2	ENTRY	MSG			TERMINATE MSG
2	DESTROY	MSG			
2	END				
2	END				

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
WPS	2	25632.000	12816.000	1008.000	11808.000	13824.000	13824.000
PROCESS WAIT	2	25632.000	12816.000	1008.000	11808.000	13824.000	13824.000
RESOURCE WAIT	0	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	342	0	342	2	340	0	0

ITEM	CREATED	RECEIVED	SENT	DESTR'D
MSG	342	0	0	0

ITEM	PROCESS	HOLDING	TIME	MEAN	MINIMUM	MAXIMUM	STD DEV
MSG	342	0	0	0	0	0	0

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

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
342	START	ALL	NO			
342	GIVEN	MSG	PRIORITY	MSG	TYPE	
342	CREATE	MSG	MSG_LNTH	10	MSG	CREATE MESSAGE
342	ASSIGN	MSG	MSG_LNTH			SET MESSAGE LENGTH
342	ASSIGN	MSG	MSG_LNTH			SET PROCESS
342	ASSIGN	MSG	PRIORITY			SET PRIORITY
342	ASSIGN	MSG	PRIORITY			SET DESTINATION
342	ASSIGN	MSG	MSG	TNODE		SET MESSAGE TYPE
342	ASSIGN	MSG	MSG	TYPE		EXECUTIVE SERVICING OF MSG
342	CALL	NODEPROC	WAIT	0		
342	GIVEN	MSG				
342	END					

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
NODEPROC	10	65088.000	6508.800	4162.845	0.	13824.000	13824.000
PROCESS WAIT	10	65088.000	6508.800	4162.845	0.	13824.000	13824.000
RESOURCE WAIT	385	0.	0.	0.	0.	0.	0.

TOTAL	#	AUTO	#	CALL	#	OF	#	NOT	#	TIMES
SCHEDULE	385	0	385	10	375	0				
SCHEDULE	385	0	385	10	375	0				

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

PROCESS	HOLDING	TIME	MINIMUM	MAXIMUM	STD DEV
MSG	385	0.	0.	0.	0.

PROCESS DESCRIPTION


```

=====
CURRENT NODE
DATE OF NO
LENGTH
ESSING DE
EAD FOR P
UTING
DE TO OTH
STINATION
TO CHANNE
ESTINATION
CH MESSAGE
=====

```

IN	MAX
0.	11
0.	11
0.	11
0.	11

COUNT	ENTRY	PROCESS HOLDING TIME			MAXIMUM	STD DEV
		# SAMPLES	MEAN	MINIMUM		
1	0	0	0	0	0	

PROCESS DESCRIPTION

TO1

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
1	START	ALL				NO
1	GIVEN	MSG				
1	RETURN	MSG				
1	END					

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TO2	0	0	0	0	0	0

PROCESS	TOTAL	PROCESS WAIT	RESOURCE WAIT
TO2	0	0	0

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

PROCESS DESCRIPTION

TO2

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
0	START	ALL				NO
0	GIVEN	MSG				
0	RETURN	MSG				
0	END					

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TO3	0	0	0	0	0	0

PROCESS	TOTAL	PROCESS WAIT	RESOURCE WAIT
TO3	0	0	0

14 # AUTO # CALL # OF # NOT # TIMES
 OF # SCHEDULE COMPLETE SUSPEND
 0 0 0 0 0 0

PROCESS DESCRIPTION
 =====
 T03

COUNT ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
0	START	ALL	NO		
0	GIVEN	MSG			
0	RETURN	MSG			
0	END				

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
T04						

TOTAL	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 COMPLETE SUSPEND
 0 0 0 0 0 0

A-90
 PROCESS DESCRIPTION
 =====
 T04

COUNT ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
0	START	ALL	NO		
0	GIVEN	MSG			
0	RETURN	MSG			
0	END				

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
T05						

TOTAL	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 COMPLETE SCHEDULE COMPLETE SCHEDULE COMPLETE

[illegible]

PROCESS	DESCRIPTION
105	1. ...
	2. ...
	3. ...
	4. ...
	5. ...
	6. ...
	7. ...
	8. ...
	9. ...
	10. ...
	11. ...
	12. ...
	13. ...
	14. ...
	15. ...
	16. ...
	17. ...
	18. ...
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	41. ...
	42. ...
	43. ...
	44. ...
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	89. ...
	90. ...
	91. ...
	92. ...
	93. ...
	94. ...
	95. ...
	96. ...
	97. ...
	98. ...
	99. ...
	100. ...

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
0		START	ALL	NO	
0		GIVEN	MSG		
0		RETURN	MSG		
0		END			

PROCESS	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOTAL					
SAMPLES					

[illegible]

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

0 0 1 1 0 1

ITEM	CREATED	RECEIVED	SENT	DESTR'D
1	11/1/50	11/1/50	11/1/50	11/1/50
2	11/1/50	11/1/50	11/1/50	11/1/50
3	11/1/50	11/1/50	11/1/50	11/1/50
4	11/1/50	11/1/50	11/1/50	11/1/50
5	11/1/50	11/1/50	11/1/50	11/1/50
6	11/1/50	11/1/50	11/1/50	11/1/50
7	11/1/50	11/1/50	11/1/50	11/1/50
8	11/1/50	11/1/50	11/1/50	11/1/50
9	11/1/50	11/1/50	11/1/50	11/1/50
10	11/1/50	11/1/50	11/1/50	11/1/50
11	11/1/50	11/1/50	11/1/50	11/1/50
12	11/1/50	11/1/50	11/1/50	11/1/50
13	11/1/50	11/1/50	11/1/50	11/1/50
14	11/1/50	11/1/50	11/1/50	11/1/50
15	11/1/50	11/1/50	11/1/50	11/1/50
16	11/1/50	11/1/50	11/1/50	11/1/50
17	11/1/50	11/1/50	11/1/50	11/1/50
18	11/1/50	11/1/50	11/1/50	11/1/50
19	11/1/50	11/1/50	11/1/50	11/1/50
20	11/1/50	11/1/50	11/1/50	11/1/50
21	11/1/50	11/1/50	11/1/50	11/1/50
22	11/1/50	11/1/50	11/1/50	11/1/50
23	11/1/50	11/1/50	11/1/50	11/1/50
24	11/1/50	11/1/50	11/1/50	11/1/50
25	11/1/50	11/1/50	11/1/50	11/1/50
26	11/1/50	11/1/50	11/1/50	11/1/50
27	11/1/50	11/1/50	11/1/50	11/1/50
28	11/1/50	11/1/50	11/1/50	11/1/50
29	11/1/50	11/1/50	11/1/50	11/1/50
30	11/1/50	11/1/50	11/1/50	11/1/50
31	11/1/50	11/1/50	11/1/50	11/1/50
32	11/1/50	11/1/50	11/1/50	11/1/50
33	11/1/50	11/1/50	11/1/50	11/1/50
34	11/1/50	11/1/50	11/1/50	11/1/50
35	11/1/50	11/1/50	11/1/50	11/1/50
36	11/1/50	11/1/50	11/1/50	11/1/50
37	11/1/50	11/1/50	11/1/50	11/1/50
38	11/1/50	11/1/50	11/1/50	11/1/50
39	11/1/50	11/1/50	11/1/50	11/1/50
40	11/1/50	11/1/50	11/1/50	11/1/50
41	11/1/50	11/1/50	11/1/50	11/1/50
42	11/1/50	11/1/50	11/1/50	11/1/50
43	11/1/50	11/1/50	11/1/50	11/1/50
44	11/1/50	11/1/50	11/1/50	11/1/50
45	11/1/50	11/1/50	11/1/50	11/1/50
46	11/1/50	11/1/50	11/1/50	11/1/50
47	11/1/50	11/1/50	11/1/50	11/1/50
48	11/1/50	11/1/50	11/1/50	11/1/50
49	11/1/50	11/1/50	11/1/50	11/1/50
50	11/1/50	11/1/50	11/1/50	11/1/50
51	11/1/50	11/1/50	11/1/50	11/1/50
52	11/1/50	11/1/50	11/1/50	11/1/50
53	11/1/50	11/1/50	11/1/50	11/1/50
54	11/1/50	11/1/50	11/1/50	11/1/50
55	11/1/50	11/1/50	11/1/50	11/1/50
56	11/1/50	11/1/50	11/1/50	11/1/50
57	11/1/50	11/1/50	11/1/50	11/1/50
58	11/1/50	11/1/50	11/1/50	11/1/50
59	11/1/50	11/1/50	11/1/50	11/1/50
60	11/1/50	11/1/50	11/1/50	11/1/50
61	11/1/50			

ITEM	#	PROCESS	HOLDING	TIME	MINIMUM	MAXIMUM	STD DEV
	SMPLS	MEAN					
1	0	0	0	0	0	0	0

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

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	1	START	ALL	NO		
1	1	GIVEN	MSG			
1	1	RETURN	MSG			
1	1	END				

TOTAL.

```

=====
PROCESS      COUNT      SUM      MEAN      STD DEV      MINIMUM      MAXIMUM
-----
TOHOST1
TOTAL      1      13824.000      13824.000      0      13824.000      13824.000
PROCESS WAIT      1      13824.000      13824.000      0      13824.000      13824.000
RESOURCE WAIT      0      0      0      0      0      0
TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
-----
46      46      0      1      45      0
=====

```

```

=====
PROCESS      DESCRIPTION
-----
TOHOST1
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
-----
46      START  ALL      NO
46      CALL  MRS      WAIT  0
46      GIVEN  T01      PRI   $REQNORE
46      36      H1      MSG
1      END
=====

```

```

=====
PROCESS      COUNT      SUM      MEAN      STD DEV      MINIMUM      MAXIMUM
-----
TOHOST2
TOTAL      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 SUSPEND.
-----
45      45      0      0      55      0
=====

```

```

=====
PROCESS      DESCRIPTION
-----
TOHOST2
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
-----
55      START  ALL      NO
55      CALL  MRS      WAIT  0
55      GIVEN  T02      PRI   $REQNORE
55      36      H2      MSG
0      END
=====

```

PAGE 1
 PROCESS TOTAL SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM

=====

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
62	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0

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

62 0 0 0 62 0

PROCESS DESCRIPTION

=====

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
62	START	ALL	NO			
62	CALL	MRS	WAIT	0		
62	GIVEN	103	PRI	\$REQNORE		
62	END	36	H3	MSG		

PROCESS TOTAL SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM

=====

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
57	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0

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

57 0 0 0 57 0

PROCESS DESCRIPTION

=====

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
57	START	ALL	NO			
57	CALL	MRS	WAIT	0		
57	GIVEN	104	PRI	\$REQNORE		
57	END	36	H4	MSG		

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOSTS						
PROCESS WAIT	0	0	0	0	0	0
RESOURCE WAIT	0	0	0	0	0	0

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	63	0	0	63	0
SCHEDULE COMPLETE					
SCHEDULE COMPLETE SUSPEND					

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
63	START	ALL	NO		
63	CALL	MRS	WAIT	0	
63	GIVEN	T05	PRI	\$REQNORE	
63		36	H5	MSG	
0	END				

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOSTS						
PROCESS WAIT	0	0	0	0	0	0
RESOURCE WAIT	0	0	0	0	0	0

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	63	0	0	63	0
SCHEDULE COMPLETE					
SCHEDULE COMPLETE SUSPEND					

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
63	START	ALL	NO		
63	CALL	MRS	WAIT	0	
63	GIVEN	T05	PRI	\$REQNORE	
63		36	H5	MSG	
0	END				

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOSTS						
PROCESS WAIT	1	11808.000	11808.000	0	11808.000	11808.000
RESOURCE WAIT	1	11808.000	11808.000	0	11808.000	11808.000

TOTAL #	# AUTO	# CALL	# OF	# NOT	# TIMES
SCHEDULE	59	0	0	1	58
SCHEDULE COMPLETE					
SCHEDULE COMPLETE SUSPEND					

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOHOSTS						
PROCESS WAIT	0	0	0	0	0	0
RESOURCE WAIT	0	0	0	0	0	0

COUNT	ENTRY	OPCODE	PARM	PARM	COMMENT
59	START	ALL	NO		
59	CALL	MRS	WAIT	0	
59	GIVEN	T06	PRI	\$REQNORE	
59		36	H6	MSG	

PAGE 55
1

END

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
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.

PROCESS	DESCRIPTION	OPCODE	PARM	PARM	COMMENT
TURN ON TRACE OUTPUT		START	ALL	NO	
		TRACE	ON		
		TRACE	ON		
		END			

APPENDIX B

Model Descriptions for
Simulator Acceptance Tests

TESTDBA.DBF through TESTDBF.DBF

APPENDIX B

Test 1 Model - File Verification

TESTDBA.DBF Listing

PAGE 2
AITEM1

ITEM	DESCRIPTION
AITEM2	

ITEM	DESCRIPTION
AITEM3	

ITEM	DESCRIPTION
AITEM4	

ITEM	DESCRIPTION
ITEM1	

ITEM	DESCRIPTION
ITEM2	

ITEM	DESCRIPTION
ITEM3	

ITEM	DESCRIPTION
ITEM4	

ITEM	DESCRIPTION
ITEM5	

ITEM	DESCRIPTION
ITEM6	

QUEUE DEFINITION.....

PAGE 3

QUEUE MAXIMUM
MNEMONIC SIZE COMMENT

RESOURCE DEFINITION.....

RESOURCE TOTAL INITIAL
MNEMONIC # UNITS # UNITS DESCRIPTION

CPU1 8 8

CPU2 8 8

CPU3 8 8

TESTRES 8 8

ARCHITECTURE LEGAL PATH DEFINITION

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

ACTION DEFINITION.....

ACTION
MNEMONIC COMMENT

DELAY

LNGDELAY

WEDDELAY

SRTDELAY

PROCESS DEFINITION.....

PROCESS
MNEMONIC DESCRIPTION

ACYCLIC CYCLIC ACTION RESTART CONTROL PROCESS

ENTRY OPCODE PARM PARM PARM COMMENT

START ALL NO

LOOP ENTRY CYCLE CONTROL LOOP

..... ALLOCATE 1-6

ALLOC TESTRES 1 PARTIAL

1

PAGE 5

DELAY CONSTANT 1
SECONDS RESUME
DEALLOC TESTRES 4
BRANCH LOOP 100
END

LOCAL VARIABLES OF PROCESS ACYCLIC

1 TESTRES (R) 2 DELAY (A)

PROCESS

WNEUMONIC

DESCRIPTION
ACTION RESTART PROCESS WHICH GETS INTERRUPTED

ATEST

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
GIVEN	STATACTN				
ALLOC	TESTRES	5	PARTIAL		
		10			
STATACTN	CONSTANT	4			
SECONDS	RESTART				
DEALLOC	TESTRES	6			
END					

LOCAL VARIABLES OF PROCESS ATEST

1 STATACTN 2 TESTRES (R)

PROCESS

WNEUMONIC

DESCRIPTION
TRIGGER ACTION RESTART TEST PROCESS

ATRIGGER

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
ENTRY	ATEST	NOWAIT	0		
CALL	WEDDELAY				
GIVEN	CONSTANT	12			
DELAY	SECONDS	RESUME			
	ATEST	NOWAIT	0		
CALL	LNQDELAY				
GIVEN	CONSTANT	13			
DELAY	SECONDS	RESUME			
CALL	ATEST	NOWAIT	0		
GIVEN	SRTDELAY				

PAGE 6

DELAY CONSTANT 3
SECONDS RESUME
LOOP 5
END

LOCAL VARIABLES OF PROCESS ATRIGGER

```
=====
1 TEST (P) 2 WDEDELAY (A) 3 DELAY (A) 4 LMGDELAY (A)
5 SRTDELAY (A)
PROCESS
=====
DESCRIPTION
=====
WNEMONIC
=====
TEST CALL BLOCK
=====
INIT1
```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
ASSIGN	1				INITIALIZE COUNTER
ENTRY					
COMPARE	L	GT			CONTINUE FOR ALL CALLS
		WAIT			TEST VALUE OF COUNTER
CALL	V COUNT1	L			INITIATE PARALLEL INSTANT
GIVEN	PROCESS1 BLOCK	L			
EVAL	L				INCREMENT COUNTER
	L+1				
BRANCH	NEXT	100			BRANCH
ENTRY					ENTRY
WAIT					SYNCHRONIZE FOR ALL
					END

LOCAL VARIABLES OF PROCESS INIT1

```
=====
1 L
=====
2 PROCESS1 (P)
=====
```

GLOBAL VARIABLES OF PROCESS INIT1

```
=====
1 V COUNT1
PROCESS
=====
DESCRIPTION
=====
WNEMONIC
=====
TEST CALL BLOCK AND NOWAIT
=====
INIT2
```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
ASSIGN	1				INITIALIZE COUNTER


```

PAGE 7
NEXT ENTRY L
      COMPARE L
      V COUNT1 GT
      CALL PROCESS2 BLOCK WAIT
      EVAL L
      L+1
      BRANCH NEXT 100
      ENTRY CALL PROCESS2 NOWAIT 0
      WAIT CALL WAIT
      END

```

```

LOCAL VARIABLES OF PROCESS INIT2
=====
1 L
2 PROCESS2 (P)
=====

```

```

GLOBAL VARIABLES OF PROCESS INIT2
=====
1 V COUNT1
=====

```

```

PROCESS MNEMONIC
=====
INIT3
=====
DESCRIPTION
=====
CREATE, SEND, ACTION DELAY FOR 6 ITEMS
=====

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
NEXT	START	ALL	NO		ENTRY
	CREATE	ITEM1			
	SEND	PROCESS3 ITEM1			SEND AN ITEM TO PROCESS3
	DELAY	CONSTANT 1			ACTION
	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
	DELAY	CONSTANT 1			

```

PA.F  H
      CREATE      SECONDS  RESUME
      ITEM6
      SEND        PROCESS3 ITEM6
      DELAY       CONSTANT 1
      LOOP        SECONDS  RESUME
      NEXT        V_COUNT1
      END
      ACTION
      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 ITEMS (I) 8 ITEM6 (I)
=====

```

```

GLOBAL VARIABLES OF PROCESS INIT3
=====
PROCESS
=====
UNEMONIC
=====
INIT4A
=====
      CREATE, SEND, LOOP 3 ITEMS
=====

```

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
      START  ALL  NO
      ENTRY
      CREATE  AITEM1 AITEM2 AITEM3 ENTRY
      SEND    PROCESS4 AITEM1 AITEM2 CREATE 3 ITEMS
      AITEM3
      LOOP    NEXT  V_COUNT1
      END      LOOP V_COUNT1 TIMES - NEXT

```

```

LOCAL VARIABLES OF PROCESS INIT4A
=====
1 AITEM1 (I) 2 AITEM2 (I) 3 AITEM3 (I) 4 PROCESS4 (P)
=====

```

```

GLOBAL VARIABLES OF PROCESS INIT4A
=====
PROCESS
=====
UNEMONIC
=====
INIT4B
=====
      CREATE, SEND, LOOP WITH DELAY
=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====

```

```

PAGE          9
NEXT          START      ALL      NO      ENTRY
              ENTRY      DELAY      CONSTANT 10      ACTION
              DELAY      DELAY      SECONDS  RESUME
              CREATE      AITEM4      AITEM4      CREATE
              SEND      PROCESS4 AITEM4
              LOOP      NEXT      V_COUNT1
              END      LOOP V_COUNT1 TIMES - NEXT

```

```

LOCAL VARIABLES OF PROCESS INIT4B
=====
1 DELAY (A) 2 AITEM4 (1) 3 PROCESS4 (P)
=====

```

```

GLOBAL VARIABLES OF PROCESS INIT4B
=====
1 V_COUNT1
=====
PROCESS
=====
MNEMONIC      DESCRIPTION
=====
PLONG1
=====

```

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  START  ALL  NO  PARTIAL
ALLOC  ALLOC  CPU1 5
DELAY  DELAY  $PRIORITY 6
DEALLOC  DEALLOC  CPU1 3
DELAY  DELAY  CONSTANT 5
DEALLOC  DEALLOC  CPU1 2
END

```

```

LOCAL VARIABLES OF PROCESS PLONG1
=====
1 CPU1 (R) 2 DELAY (A)
=====
PROCESS
=====
MNEMONIC      DESCRIPTION
=====
PLONG2
=====

```

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  START  ALL  NO  PARTIAL
ALLOC  ALLOC  CPU2 5
$PRIORITY

```

```

      DELAY          CONSTANT 5
      DEALLOC        SECONDS 3
      DELAY          CONSTANT 5
      DEALLOC        SECONDS 2
      END

```

	1 CPU2	(R)	2 DELAY	(A)
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11	1	1	1	1
12	1	1	1	1
13	1	1	1	1
14	1	1	1	1
15	1	1	1	1
16	1	1	1	1
17	1	1	1	1
18	1	1	1	1
19	1	1	1	1
20	1	1	1	1
21	1	1	1	1
22	1	1	1	1
23	1	1	1	1
24	1	1	1	1
25	1	1	1	1
26	1	1	1	1
27	1	1	1	1
28	1	1	1	1
29	1	1	1	1
30	1	1	1	1
31	1	1	1	1
32	1	1	1	1
33	1	1	1	1
34	1	1	1	1
35	1	1	1	1
36	1	1	1	1
37	1	1	1	1
38	1	1	1	1
39	1	1	1	1
40	1	1	1	1
41	1	1	1	1
42	1	1	1	1
43	1	1	1	1
44	1	1	1	1
45	1	1	1	1
46	1	1	1	1
47	1	1	1	1
48	1	1	1	1
49	1	1	1	1
50	1	1	1	1
51	1	1	1	1
52	1	1	1	1
53	1	1	1	1
54	1	1	1	1
55	1	1	1	1
56	1	1	1	1
57	1	1	1	1
58	1	1	1	1
59	1	1	1	1
60	1	1	1	1
61	1	1	1	1
62	1	1	1	1
63	1	1	1	1
64	1	1	1	1
65	1	1	1	1
66	1	1	1	1
67	1	1	1	1
68	1	1	1	1
69	1	1	1	1
70	1	1	1	1
71	1	1	1	1
72	1	1	1	1
73	1	1	1	1
74	1	1	1	1
75	1	1	1	1
76	1	1	1	1
77	1	1	1	1
78	1	1	1	1
79	1	1	1	1
80	1	1	1	1
81	1	1	1	1
82	1	1	1	1
83	1	1	1	1
84	1	1	1	1
85	1	1	1	1
86	1	1	1	1
87	1	1	1	1
88	1	1	1	1
89	1	1	1	1
90	1	1	1	1
91	1	1	1	1
92	1	1	1	1
93	1	1	1	1
94	1	1	1	1
95	1	1	1	1
96	1	1	1	1
97	1	1	1	1
98	1	1	1	1
99	1	1	1	1
100	1	1	1	1

PROCESS	(K)	2 DELAY	(A)
WNEUWONIC			
PLOMG3			

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	START	ALL	NO		
ALLOC	ALLOC	CPU3	5	PARTIAL	
		\$PRIORITY			
DELAY	DELAY	CONSTANT	5		
		SECONDS	RESUME		
DEALLOC	DEALLOC	CPU3	3		
DELAY	DELAY	CONSTANT	5		
		SECONDS	RESUME		
DEALLOC	DEALLOC	CPU3	2		
END	END				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524

PROCESS	(M)	2 DELAY	(A)
1 CPU03			
PROCESS			
MNLWMLNLC			
PRESETR3			

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
LOOP	START	ALL	NO		
	ENTRY				
	DELAY	CONSTANT 2	SECONDS	RESUME	
OOP1	ENTRY				
	RESET	CPU3	-3		
	DELAY	CONSTANT 2	SECONDS	RESUME	

PAGE 11

RESET CPU3 3
DELAY CONSTANT 28
LOOP SECONDS RESUME
LOOP1 20
END

LOCAL VARIABLES OF PROCESS PRESETR3

1 DELAY (A) 2 CPU3 (R)

PROCESS DESCRIPTION

WNEMONIC

PROCESS1 GIVEN-TIME, ACTION DELAY

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
GIVEN	TIME				
DELAY	CONSTANT	TIME			ACTION
	SECONDS	RESUME			
					END

LOCAL VARIABLES OF PROCESS PROCESS1

1 TIME 2 DELAY (A)

PROCESS DESCRIPTION

WNEMONIC

PROCESS2 ACTION DELAY (CONSTANT)

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
DELAY	CONSTANT	10			
	SECONDS	RESUME			
					END

LOCAL VARIABLES OF PROCESS PROCESS2

1 DELAY (A)

PROCESS DESCRIPTION

WNEMONIC

PROCESS3 RECEIVE AND DESTROY ITEMS -- SERIAL # NO MATCH

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT

```

PAGE 12
=====
START ALL NO
RECEIVE ITEM1 ITEM2 ITEM3
ITEM4 ITEM5 ITEM6
DESTROY ITEM1 ITEM2 ITEM3 DESTROY ALL SIX ITEMS
ITEM4 ITEM5 ITEM6
END

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

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO MATCH
RECEIVE AITEM1 AITEM2 AITEM3
AITEM4
DESTROY AITEM1 AITEM2 AITEM3 DESTROY 4 ITEMS
AITEM4
END

LOCAL VARIABLES OF PROCESS PROCESS4
=====
1 AITEM1 (1) 2 AITEM2 (1) 3 AITEM3 (1) 4 AITEM4 (1)
PROCESS
=====
DESCRIPTION
=====
PSHRT1
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
ALLOC CPU1 5 PARTIAL
DELAY $PRIORITY 1
CONSTANT 1
SECONDS RESUME
DEALLOC CPU1 1
DELAY CONSTANT 1
SECONDS RESUME
DEALLOC CPU1 1
DELAY CONSTANT 1

```

```

SECONDS RESUME
DEALLOC CPU1 1
DELAY CONSTANT 1
SECONDS RESUME
DEALLOC CPU1 1
DELAY CONSTANT 1
SECONDS RESUME
DEALLOC CPU1 1
END

```

LOCAL VARIABLES OF PROCESS PSHT1

```

=====
1 CPU1 (R) 2 DELAY (A)

```

```

PROCESS

```

```

MNEUMONIC

```

```

PSHT2

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
ALLOC	CPU2	5		PARTIAL	
DELAY	CONSTANT	1			
DEALLOC	CPU2	1		SECONDS RESUME	
DELAY	CONSTANT	1			
DEALLOC	CPU2	1		SECONDS RESUME	
DELAY	CONSTANT	1			
DEALLOC	CPU2	1		SECONDS RESUME	
DELAY	CONSTANT	1			
DEALLOC	CPU2	1		SECONDS RESUME	
DELAY	CONSTANT	1			
DEALLOC	CPU2	1		SECONDS RESUME	
END					

LOCAL VARIABLES OF PROCESS PSHT2

```

=====
1 CPU2 (R) 2 DELAY (A)

```

```

PROCESS

```

```

MNEUMONIC

```

```

PSHT3

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
ALLOC	CPU3	5		PARTIAL	
DELAY	CONSTANT	1			
DEALLOC	SECONDS	RESUME			
DELAY	CPU3	1			
DEALLOC	CONSTANT	1			
DELAY	SECONDS	RESUME			
DEALLOC	CPU3	1			
DELAY	CONSTANT	1			
DEALLOC	SECONDS	RESUME			
DELAY	CPU3	1			
DEALLOC	CONSTANT	1			
DELAY	SECONDS	RESUME			
DEALLOC	CPU3	1			
END					

LOCAL VARIABLES OF PROCESS PSHT3

PROCESS	OPCODE	PARM	PARM	PARM	COMMENT
1 CPU3	(R)	2 DELAY	(A)		
PROCESS					
MNEMONIC					
TRACE					

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
COMPARE	C_TRACE			EQ	
TRACE	ON			END	
TRACE	ON				
ENTRY					
END					

GLOBAL VARIABLES OF PROCESS TRACE

GLOBAL	OPCODE	PARM	PARM	PARM	COMMENT
1 C_TRACE					
LOAD DEFINITION					
LOAD					

PAGE 15
MNEUMONIC
=====

DESCRIPTION
=====

LOAD
=====

NODES
=====

PROCESS	MNEUMONIC	MAX #	SCHEDULE METHOD	MEAN	DELTA	UNITS	PRIORITY
PLONG1	100	100	INTERVAL 15			SECONDS	2
PSHRT1	100	100	INTERVAL 8			SECONDS	2

LOAD
MNEUMONIC
=====

DESCRIPTION
=====

LOAD
=====

NODES
=====

PROCESS	MNEUMONIC	MAX #	SCHEDULE METHOD	MEAN	DELTA	UNITS	PRIORITY
PLONG2	100	100	INTERVAL 15			SECONDS	2
PSHRT2	100	100	INTERVAL 8			SECONDS	2

LOAD
MNEUMONIC
=====

DESCRIPTION
=====

LOAD
=====

NODES
=====

PROCESS	MNEUMONIC	MAX #	SCHEDULE METHOD	MEAN	DELTA	UNITS	PRIORITY
PLONG3	100	100	INTERVAL 16			SECONDS	2
PRESETR3	1	1	START			SECONDS	1
PSHRT3	100	100	INTERVAL 8			SECONDS	2

LOAD
MNEUMONIC
=====

DESCRIPTION
=====

LOAD
=====

NODES
=====

PROCESS	MAX #	SCHEDULE	MEAN	DELTA	UNITS	PRIORITY
MNEMONIC		METHOD				
INIT1	1	START			SECONDS	0
INIT2	1	START			SECONDS	0

SCENARIO DEFINITION....

SCENARIO	DESCRIPTION
MNEMONIC	
TEST1	

PERIOD	PERIOD	OUTPUT
LENGTH	UNITS	
100	SECONDS	

PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD
MNEMONIC	MNEMONIC	MNEMONIC	MNEMONIC	MNEMONIC	MNEMONIC
1					

TRIGGER	TIME	TO SCHEDULE	SCHEDULE	TRIGGER	TIME	TO SCHEDULE	SCHEDULE
MNEMONIC	SCHEDULE	UNITS	PRIORITY	MNEMONIC	SCHEDULE	UNITS	PRIORITY
INIT1	0	SECONDS	0	INIT2	0	SECONDS	0
INIT3	0	SECONDS	0	INIT4A	0	SECONDS	0
INIT4B	0	SECONDS	0	ATRIGGER	0	SECONDS	0
ACYCLIC	0	SECONDS	0	LOADA3	0	SECONDS	2
LOADA1	0	SECONDS	2	LOADA2	0	SECONDS	2

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX B

Test 1 Model - File Verification

TESTDBB.DBF Listing

```

#####
S  SIMULATION REPORT
S
S  AISIM VERSION 5.0
S  HUGHES AIRCRAFT COMPANY
S  05/15/87
#####

```

04/20/1987 19:25:39

TESTDB8

TEST KEYWORDS, PARAMETER PASSING, AND READ/WRITE.

GLOBAL CONSTANT DEFINITION.....

CONSTANT INITIAL	COMMENT
WNEMONIC VALUE	

FILE DEFINITION

FILE	WNEMONIC	COMMENT
FILE1		FILE TO READ FROM
FILE2		FILE TO WRITE TO

TABLE DEFINITION.....

GLOBAL VARIABLE DEFINITION.....

VARIABLE INITIAL	WNEMONIC VALUE	COMMENT
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_CNODE A		GLOBAL VARIABLE OF CURRENT NODE INITIALIZED TO RES
V_NXTND B		GLOBAL VARIABLE INITIALIZED TO RESOURCE

PAGE 2
ITEM DEFINITION

QUEUE DEFINITION

QUEUE WNEUMONIC	MAXIMUM SIZE	COMMENT
A	1	

RESOURCE DEFINITION

RESOURCE WNEUMONIC	TOTAL UNITS	INITIAL # UNITS	DESCRIPTION
A	1	1	RESOURCE FOR NODE
B	1	1	RESOURCE FOR NODE
C	1	1	RESOURCE FOR NODE
C1	1	1	RESOURCE FOR CON
CHNL	1	1	RESOURCE FOR CON

ATTR NAME	INITIAL VALUE
SPEED	0

ARCHITECTURE LEGAL PATH DEFINITION

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

ACTION DEFINITION

ACTION WNEUMONIC	COMMENT
ADelay	DELAY AT PROCESS A
BDelay	DELAY IN PROCESS B
REPLY	TEST DELAY IN PROC FOR REPLY
TRANSFER	CHANNEL TRANSFER DELAY

PROCESS DEFINITION

PROCESS
UNEMUNIC

APROC

DESCRIPTION

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
N1	START	A			
	ALLOC	SCNODE	1	ALL	TEST SCNODE IN ALLOC CONTX
	ADelay	PRIORITY			TEST SCLOCK IN ACTION MEAN
	ADelay	CONSTANT	SCLOCK		
	ADelay	CONSTANT	RESUME		
	ASSIGN	SCNODE	RESUME		TEST ASSIGNMENT OF SCNODE
	ASSIGN	SCNODE			TEST ASSIGNMENT SCNODE
	READ	FILE1	EOF		TEST READING OF SCNODE
	WRITE	FILE2			TEST WRITING OF SCNODE
	ASSIGN	SCNODE	BPROC		TEST PROCESS TO LOCAL
	ASSIGN	SCNODE	NEXT		TEST SCNODE EVALUATION
	ASSIGN	SCNODE	BPROC		TEST SCNODE GLOBAL TO LOCAL
	ASSIGN	SCNODE	EPROC		TEST SCNEXTNODE
	COMPARE	LB1		EQ	TEST ASSIGNMENT & COMPARE
	N2	BRANCH	LB1		
ENTRY		LB1			
ASSIGN		SCNEXTNODE	LB1		TEST SCNEXTNODE
ASSIGN		SCNEXTNODE	LB2		
COMPARE		LB3		EQ	TEST SCNEXTNODE TO LOCAL
COMPARE		LB3		N2	
BRANCH		N2			
ENTRY		N2			
ASSIGN		SLINK	R		TEST SLINK TO LOCAL RES.
ASSIGN		SLINK	LB3		TEST SLINK TO LOCAL
ASSIGN		SLINK	V NEXT		TEST SLINK GLOBAL

TEST	TEST NAME	TEST CODE	TEST DATA	TEST RESULT	TEST DESCRIPTION
A1	COMPARE ENTRY COMPARE	SCNDR A1	100	EQ A1	TEST COMPARE CONTEXT SCNDR
A2	COMPARE ENTRY COMPARE	SCNDR A2	100	EQ A2	TEST CONTEXT SCNDR TO LOC
A3	COMPARE ENTRY COMPARE	SCNDR A3	100	EQ A3	TEST CONTEXT SCNDR - GLOBAL
A4	COMPARE ENTRY COMPARE	SCNDR A4	100	EQ A4	TEST SCNDR GLOBAL - LOCAL
A5	COMPARE ENTRY COMPARE	SCNDR A5	100	EQ A5	TEST SCNDR COMPARE
A6	COMPARE ENTRY COMPARE	SCNDR A6	100	EQ A6	TEST ASSIGN SCNDR
A7	COMPARE ENTRY COMPARE	SCNDR A7	100	EQ A7	AVAILABILITY OF SCNDR
A8	COMPARE ENTRY COMPARE	SCNDR A8	100	EQ A8	SWITCH BUSY FLAG ON CHNL
A9	COMPARE ENTRY COMPARE	SCNDR A9	100	EQ A9	TEST READING ALL ATTRIBUTE
A10	COMPARE ENTRY COMPARE	SCNDR A10	100	EQ A10	TEST WRITING SPEED ATTR OF
A11	COMPARE ENTRY COMPARE	SCNDR A11	100	EQ A11	TEST READING RESOURCE NAME
A12	COMPARE ENTRY COMPARE	SCNDR A12	100	EQ A12	TEST WRITING LOCAL
A13	COMPARE ENTRY COMPARE	SCNDR A13	100	EQ A13	TEST SHOULD FAIL
A14	COMPARE ENTRY COMPARE	SCNDR A14	100	EQ A14	RELEASE CURRENT NODE
A15	COMPARE ENTRY COMPARE	SCNDR A15	100	EQ A15	TRANSFER DATA OVER CHANNEL
A16	COMPARE ENTRY COMPARE	SCNDR A16	100	EQ A16	RELEASE CURRENT CHANNEL
A17	COMPARE ENTRY COMPARE	SCNDR A17	100	EQ A17	WRITE SPRIORITY
A18	COMPARE ENTRY COMPARE	SCNDR A18	100	EQ A18	WRITE SCLOCK

```

WRITE
FILED
STACK
HPRUC
SCLCCK
NOWAIT
P
TEST PARAMETER BINDING
STACK
END
SCLCCK
TEST BINDING OF STACK
END

```

```

LOCAL VARIABLES OF PROCESS APRUC
1 ADELAY (A) 2 L UNDEF
5 LB1 6 LB2
9 V NEXT 10 B
11 L NTRND 12 L 2 CHNL
13 L NTRND 14 RESOURCE
15 TRANSFER (A)

```

```

GLOBAL VARIABLES OF PROCESS APRUC
1 V CNODE (R) 2 V CHNL
3 V NTRND (M)

```

```

PROCESS
MNEUMONIC
DESCRIPTION
BPRUC

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	R	NO		
	GETM	LCLOCK	UNDEF	1 TASK	
	ASSTN	SNODE	HPRUC		LEFT CURRENT NODE REGISTER
	ALLOC	SNODE	1	ALL	MAKE B BUSY
	ROFLAY	SPRIORITY			
		CONSTANT	SCLOCK		
	TEST	SECMOS	RESUME		TEST AVAILABILITY OF B
	BRANCH	SNODE	B1		
	ENTRY	B1	100		
R1	DEALLOC	SNODE	1		TEST EVAL CONTEXT SCLOCK
	EVAL	L1			
		0+SCLOCK			
	EVAL	L2			
	COMPARE	LCLOCK-0			
		L1		EQ	
		L2		B2	
	BRANCH	B2			
	ENTRY	B2	100		
H2	EVAL	V_CLOCK1			EVAL GLOBAL VARIABLE TEST
		0+SCLOCK			
	EVAL	V_CLOCK2			

PA 2 6

```

0 SCLOCK
V CLOCK2
ABJOLUTEY CLOCK2
COMPARE V CLOCK1 EQ
V CLOCK2 B3
BRANCH B3 100
ENTRY
ALLOC UNODE 1 ALL ALLOCATE PASSED PARAMETER
REPLY CONSTANT 10
SECONDS M5:MM
TEST UNODE B4
BRANCH B4 100
ENTRY
DEALLOC UNODE 1
RESUME TASK RESTART PARENT PROCESS
END

```

LOCAL VARIABLES OF PROCESS BPROC

1	2	3	4
1 CLOCK	2 UNODE	3 TASK	4 BPROC
5 DELAY (A)	6 1	7 12	8 REPLY (A)

GLOBAL VARIABLES OF PROCESS BPROC

```

1 V CLOCK1
2 V CLOCK2
PROCESS
MEMORY
TRACE
DESCRIPTION
TURN ON THE TRACE CAPABILITY

```

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

LOAD DEFINITION

LOAD	DESCRIPTION
UNEMONIC	
LOAD1	INITIATE APPROX TEST CASE AT START
LOAD	MODES

A

PAGE 7

PROCESS	UNEMONIC	MAX #	SCHEDULE METHOD	MEAN	DELTA	UNITS	PRIORITY
APRIL	1	1	START	0	0	SECONDS	0

SCENARIO DEFINITION

SCENARIO	UNEMONIC	DESCRIPTION
SCEN	1	ONE

PERIOD	LENGTH	UNITS	PERIOD	UNITS	PERIOD	UNITS	PERIOD	UNITS	PERIOD	UNITS	PERIOD	UNITS	
100	1	SECONDS	100	1	SECONDS	100	1	SECONDS	100	1	SECONDS	100	1

TRIGGER	TIME	TO SCHEDULE	SCHEDULE	TRIGGER	TIME	TO SCHEDULE	SCHEDULE
UNEMONIC	0	SECONDS	5	LOAD1	0	SECONDS	0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX B

Test 1 Model - File Verification

TESTDBC.DBF Listing

```

#####
$ SIMULATION REPORT
$
$   AISTM VERSION 5.0
$   HUGHES AIRCRAFT COMPANY
$   05/15/87
#####

```

04/20/1987 19:28:28

TESTDRC

TEST BATCH MODE PROCESSING

GLOBAL CONSTANT DEFINITION.....

CONSTANT INITIAL	COMMENT
WNEMONIC VALUE	

FILE DEFINITION.....

FILE	COMMENT
WNEMONIC	

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

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

ITEM DEFINITION.....

ITEM	DESCRIPTION

PAGE

2

MSG

MESSAGE ITEM SENT FROM PRODUCE TO CONSUME

ATTR.

INITIAL

NAME

VALUE

=====

=====

LENGTH

\$LENGTH

QUEUE DEFINITION.....

QUEUE

MAXIMUM

SIZE

COMMENT

=====

=====

BUFFER

INFINITE BUFFER FOR MESSAGES AWAITING PROCESSING

=====

=====

RESOURCE DEFINITION.....

RESOURCE TOTAL

INITIAL

DESCRIPTION

=====

=====

SEMA

1

1

SEMA INDICATES IF TRANSMIT BUSY OR NOT

=====

=====

STATION1

1

1

LOCATION OF TRANSMITTING PROCESS

=====

=====

STATION2

1

1

LOCATION OF RECEIVING PROCESS

=====

=====

ARCHITECTURE LEGAL PATH DEFINITION

FROM

TO

NEXT

VIA

=====

=====

DEVICE

DEVICE

LINK

LINK

=====

=====

ACTION DEFINITION.....

ACTION

COMMENT

=====

=====

READ MSG

DELAY AT RECEIVE TO PROCESS MESSAGE

=====

=====

SENDING

DELAY AT TRANSMIT TO DELIVER MESSAGE TO BUFFER

=====

=====

PROCESS DEFINITION.....

PROCESS

DESCRIPTION

=====

=====

RECEIVE

RECEIVE MESSAGES FROM TRANSMIT

=====

=====

ENTRY

OPCODE

PARAM

PARAM

COMMENT

=====

=====

104

```

START STATION2 NO
TEST SEMA ABORT
REMOVE FIRST MSG
COMPARE MSG
ASSIGN MSG LENGTH
EVAL ALPHA
EVAL MU
READ_MSG CONSTANT MU
DESTROY MSG
ENTRY END
ABORT

```

TEST FOR BUFFER USE
REMOVE BY FIFO DISCIPLINE
WHEN MSG=0 BUFFER IS EMPTY
MESSAGE LENGTH IS READ
CALCULATE RECEPTION TIME
TIME TO PROCESS MESSAGE
MSG ELIMINATED FROM SYSTEM
ENTER FROM COMPARE & TEST

LOCAL VARIABLES OF PROCESS RECEIVE

```

=====
1 SEMA (R) 2 MSG (I) 3 BUFFER (Q) 4 ALPHA
5 MU 6 READ_MSG (A)
=====

```

GLOBAL VARIABLES OF PROCESS RECEIVE

```

=====
1 GAMMA2
PROCESS
MNEMONIC
TRANSMIT
=====
DESCRIPTION
TRANSMITTING MESSAGES TO RECEIVER
=====

```

ENTRY	OPCODE	PARAM	PARAM	COMMENT
START	STATION1 NO			
ALLOC	SEMA 1	ALL		RESOURCE FOR SENDING MSG
CREATE	\$PRIORITY			INTRODUCE MSG INTO SYSTEM
EVAL	MSG			GENERATE RANDOM NUMBER
EVAL	ALPHA			AVERAGE TIME ALPHA
ASSIGN	ALPHA			SET MESSAGE LENGTH
EVAL	MSG			CALCULATE TRANSMIT TIME
SENDING	ALPHA			TIME CONSUMED TRANSMITTING
FILE	CONSTANT MU			STORE MSG ON BUFFER
DEALLOC	SEMA 1	LAST		RELEASE RESOURCE SEMA
END				


```

PAGE 5          TRANSMIT 50      EXPONENT 2      SECONDS 0
LOAD
MNEMONIC
=====
LD22          DESCRIPTION
=====
RECEIVE RATE=1000, INTERVAL, PRIORITY=1, MEAN=.5
NODES
=====
LOAD
=====
STATION2
=====

PROCESS
MNEMONIC      MAX #      SCHEDULE      METHOD      MEAN      DELTA      UNITS      PRIORITY
=====
RECEIVE       1000      INTERVAL .5      =====
SECONDS 1
=====

LOAD
MNEMONIC
=====
LD3          DESCRIPTION
=====
TRANSMIT RATE=150, EXPONENT, PRIORITY=0, MEAN=.5
NODES
=====
LOAD
=====
STATION1
=====

PROCESS
MNEMONIC      MAX #      SCHEDULE      METHOD      MEAN      DELTA      UNITS      PRIORITY
=====
TRANSMIT 150      EXPONENT .5      =====
SECONDS 0
=====

LOAD
MNEMONIC
=====
LD33         DESCRIPTION
=====
RECEIVE RATE=1000, INTERVAL, PRIORITY=0, MEAN=2
NODES
=====
LOAD
=====
STATION2
=====

PROCESS
MNEMONIC      MAX #      SCHEDULE      METHOD      MEAN      DELTA      UNITS      PRIORITY
=====
RECEIVE 1000      INTERVAL 2      =====
SECONDS 0
=====

SCENARIO DEFINITION....

SCENARIO
MNEMONIC      DESCRIPTION
=====
SCNR1          SCENARIO WITH LOAD1 (=LD1), LOAD2 (=LD2), LOAD3 (=LD3)
=====

PERIOD PERIOD OUTPUT
=====

```



```

PAGE 13
LENGTH UNITS
=====
100 SECONDS

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

TRIGGER TIME TO SCHEDULE SCHEDULE TRIGGER TIME TO SCHEDULE SCHEDULE
MNEMONIC SCHEDULE UNITS PRIORITY MNEMONIC SCHEDULE UNITS PRIORITY
=====
LD1 0 SECONDS 1 LD11 0 SECONDS 0
LD2 100 SECONDS 1 LD22 100 SECONDS 0
LD3 200 SECONDS 1 LD33 200 SECONDS 0
LD1 300 SECONDS 1 LD11 300 SECONDS 0
LD22 400 SECONDS 0

#### 0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

```

APPENDIX B

Test 1 Model - File Verification

TESTDBD.DBF Listing

```

#####
S I M U L A T I O N   R E P O R T
#####
A T S I M   V E R S I O N   5.0
#####
H U G H E S   A I R C R A F T   C O M P A N Y
#####
05/15/87
#####

```

04/21/1987 08:51:56

TESTORD

TEST VARIABLE TIME UNITS, MESSAGE ROUTINE, AND RESOURCE LOGIC

GLOBAL CONSTANT DEFINITION.....

```

CONSTANT INITIAL
MNEMONIC VALUE COMMENT
=====
V_TRACE 0 DEFAULT IS NO TRACE ON
=====

```

FILE DEFINITION.....

```

FILE
MNEMONIC COMMENT
=====

```

TABLE DEFINITION.....

GLOBAL VARIABLE DEFINITION.....

```

VARIABLE INITIAL
MNEMONIC VALUE COMMENT
=====
ABDRATE 1 INTERVAL RATE BETWEEN SIGNALS
ABRRATE 36000 INTERVAL RATE BETWEEN SIGNALS
HQRATE 72000 INTERVAL BETWEEN SIGNALS
TIME1 30 AVERAGE SEEK TIME FOR DISK IN MILLISECONDS
VRATE 1.6276 SWITCH-OTHER NODE CHANNEL SPEED IN MS/BYTE
=====

```

ITEM DEFINITION.....

```

=====
ITEM      DESCRIPTION
=====
MSG      MESSAGE FOR INTERNODE COMMUNICATION
=====

```

```

=====
ATTR.    INITIAL
NAME     VALUE
=====
CNODE   $CNODE
FNODE   $CNODE
LENGTH  99999999
RPROC   $ERROR
RPROCPR 99999999
TNODE   $CNODE
TYPE     $REQNORE
=====

```

QUEUE DEFINITION.....

```

=====
QUEUE    MAXIMUM
MNEMONIC SIZE  COMMENT
=====

```

RESOURCE DEFINITION.....

```

=====
RESOURCE TOTAL  INITIAL
MNEMONIC # UNITS # UNITS
=====
AB1      1      1
=====

```

```

=====
ATTR.    INITIAL
NAME     VALUE
=====
M_ROUTE  8
=====

```

AB2 RESOURCE FOR NODE

```

=====
ATTR.    INITIAL
NAME     VALUE
=====
M_ROUTE  8
=====

```

CH1_A RESOURCE FOR CHANNEL CONNECTOR

```

=====
ATTR.    INITIAL
NAME     VALUE
=====
RATE     VRATE
=====

```

CH1_B RESOURCE FOR CHANNEL CONNECTOR

```

=====
ATTR.    INITIAL
NAME     VALUE
=====

```

PAGE 3

=====

RATE VRATE

RESOURCE FOR CHANNEL CONNECTOR

CH2_A 1 INITIAL
ATTR. NAME VALUE
=====

RATE VRATE

RESOURCE FOR CHANNEL CONNECTOR

CH2_B 1 INITIAL
ATTR. NAME VALUE
=====

RATE VRATE

RESOURCE FOR CHANNEL CONNECTOR

CH3_A 1 INITIAL
ATTR. NAME VALUE
=====

RATE 0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH3_B 1 INITIAL
ATTR. NAME VALUE
=====

RATE 0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH4_A 1 INITIAL
ATTR. NAME VALUE
=====

RATE 0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH4_B 1 INITIAL
ATTR. NAME VALUE
=====

RATE 0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH5_A 1 INITIAL
ATTR. NAME VALUE
=====

RATE 0.4069

RESOURCE FOR CHANNEL CONNECTOR

CH5_B 1 INITIAL
ATTR. NAME VALUE
=====

PAGE	4	RATE	0.4069	
CH6_A	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH6_B	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH7_A	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH7_B	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH8_A	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH8_B	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH9_A	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	
CH9_B	1	ATTR	INITIAL	RESOURCE FOR CHANNEL CONNECTOR
		NAME	VALUE	
		RATE	VRATE	

PAGE 5

COMMAND HEAD-QUARTERS

CHQ 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE

DISK FOR COMMAND HEAD-QUARTERS

DK1 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE
LATDELTA 15
LATENCY 15
M_ROUTE 0
SEEK TIME1
SPEED 20000

HEAD-QUARTERS

HQ 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE

RESOURCE FOR NODE

L3 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE

SWITCH BETWEEN AIRBASES AND OTHER TWO SWITCHES (1&2)

SW1 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE

SWITCH BETWEEN SWITCH 1 & 3 AND HQ

SW2 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE

SWITCH BETWEEN SWITCH 1 & 2 AND CHQ

SW3 1 ATTR. INITIAL
NAME VALUE
===== 8
M_ROUTE

ARCHITECTURE LEGAL PATH DEFINITION

[illegible]

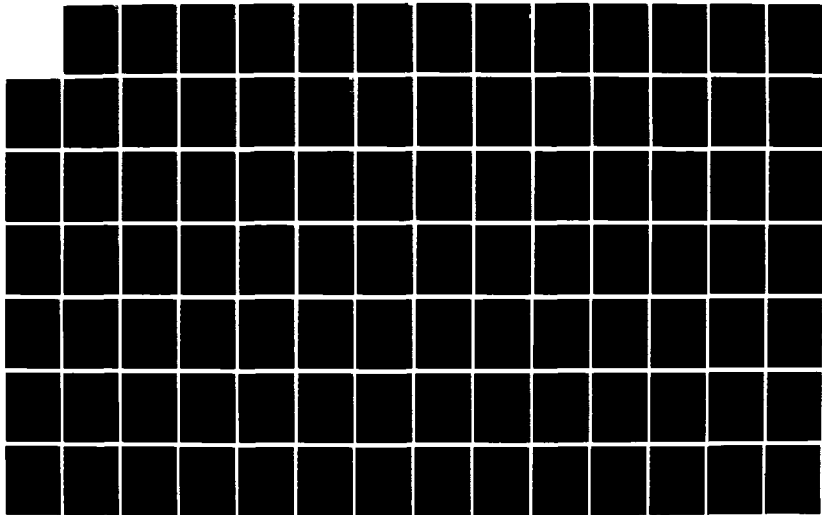
AD-A189 146

AUTOMATED INTERACTIVE SIMULATION MODEL (AISIM) VAX
VERSION 50 ACCEPTANCE. (U) HUGHES AIRCRAFT CO FULLERTON
CA GROUND SYSTEMS GROUP V ALLERTON ET AL. 29 APR 87
1854474-2 ESD-TR-87-226 F19628-86-C-0070 F/G 12/5

3/4

UNCLASSIFIED

NL





RESOLUTION TEST CHART


```

=====
PAGE      8
=====
START      NO
GIVEN      MSG
RETURN     MSG
UPDATE     CONSTANT 0.1
           MSECSECONDS RESUME
           TIME CONSUMED IN UPDATING
ENT
=====

```

```

=====
LOCAL VARIABLES OF PROCESS ABUPDATE
=====
1 MSG      (I) 2 UPDATE (A)
=====
PROCESS
MNEMONIC
=====
AB_DATA
=====

```

```

=====
ENTRY      OPCODE  PARM  PARM  PARM  COMMENT
=====
START      NO
GIVEN      MSG
RETURN     MSG
CALL       MRS     NOWAIT 10    PROCESS REQUEST TO CHQ
GIVEN      CHQ_DATA 10    $REQNORE
           750    CHQ    MSG
CALL       MRS     NOWAIT 10    PROCESS REQUEST TO HQ
GIVEN      HQ_DATA 10    $REQNORE
           750    HQ     MSG
ASSIGN     $CNODE
COMPARE    CNODE
CALL       MRS     NOWAIT 10    TEST FOR CURRENT NODE
GIVEN      ABUPDATE 10    $REQNORE
           750    AB1    MSG
BRANCH     END     100
ENTRY     MRS     NOWAIT 10    BRANCH TO THE END
GIVEN      ABUPDATE 10    $REQNORE
           750    AB2    MSG
END        ENTRY FROM REQUEST TO AB1
=====

```

```

=====
LOCAL VARIABLES OF PROCESS AB_DATA
=====
1 MSG      (I) 2 MRS (P) 3 CHQ_DATA (P) 4 CHQ (R)
6 HQ_DATA (P) 8 HQ (R) 7 CNODE 8 AB1 (R)
9 ABUPDATE (P) 10 AB2 (R)
PROCESS
=====

```

PAGE 9
 MNEMONIC
 AB_REQ

DESCRIPTION
 AISBASE REQUEST FOR PLANS REPORT FROM CHQ

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
	START			NO	
	GIVEN	MSG			
	RETURN	MSG			
	CALL	MRS	WAIT	5	PROCESS REQUEST TO CHQ
	GIVEN	PLANS	S	\$REQRESP	
		200	CHQ	MSG	
	END				

LOCAL VARIABLES OF PROCESS AB_REQ
 1 MSG (1) 2 MRS (P) 3 PLANS (P) 4 CHQ (R)

PROCESS
 MNEMONIC
 CHANPROC

DESCRIPTION
 FULL AND HALF DUPLEX CHANNEL LOGIC

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
	START	ALL		NO	
	GIVEN	MSG	CNODE		SET INTERNAL NODE CURRENT
	ASSIGN	\$CNODE			GET DESTINATION NODE
	ASSIGN	MSG	TNODE		SET NEXT NODE TO DESTN
	ASSIGN	TO NODE			GET CHANNEL TO NEXT NODE
	ASSIGN	\$NXTNODE	TO NODE		OBTAIN CHANNEL FOR XFER
	ASSIGN	\$CHANNEL	TO NODE		WHAT IS CHANNEL RATE?
	ASSIGN	CHANNEL	1	ALL	MESSAGE LENGTH
	ASSIGN	\$PRIORITY			CALCULATE TRANSFER TIME
	ASSIGN	CHANNEL	RATE		DELAY DUE TO TRANSFER TIME
	ASSIGN	VSPEED	LENGTH		MSG RESIDES IN NEXT NODE
	ASSIGN	MSG			
	EVAL	VM OVHD			
	XFER_OH	VSPEED*VLENGTH			
	ASSIGN	CONSTANT VM OVHD			
		MSECONDS RESUME			
		NXT_NODE			
		MSG_	CNODE		

```

PAGE 10
ASSIGN      NXT NODE      SET INTERNAL NODE REGISTER
3CNODE
DEALLOC    CHANNEL 1      FREE UP CHANNEL AFTER XFER
CALL      MODEPROC WAIT 0  ROUTE MESSAGE TO NEXT NODE
GIVEN      MSG
END

LOCAL VARIABLES OF PROCESS CHANPROC
=====
1 MSG (1) 2 TO NODE      3 NXT NODE      4 CHANNEL
5 VSPEED 6 VLENGTH      7 VM_DVID      8 XFER_OH (A)
9 NODEPROC (P)
PROCESS
=====
MNEMONIC    DESCRIPTION
=====
CHQ_DATA    CHQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES
=====

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START   NO
GIVEN   MSG
RETURN  MSG
ASSIGN  MSG
EVAL    VLENGTH
        VTIME
        .016 * VLENGTH
UPDATE  CONSTANT VTIME
        WSECONDS RESUME
END

MAKE MSG-LENGTH = V_LENGTH
EVALUATE MSG PROCESS TIME
PROCESSING TIME CONSUMED

LOCAL VARIABLES OF PROCESS CHQ_DATA
=====
1 MSG (1) 2 V_LENGTH      3 V_TIME      4 UPDATE (A)
PROCESS
=====
MNEMONIC    DESCRIPTION
=====
DESTPROC    PROCESSING AT DESTINATION OF MESSAGE
=====

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START   ALL
GIVEN   MSG
ASSIGN  CNODE
COMPARE MSG
        TYPE
        EQ
        IF RESPONSE, DESTROY
        $RESP
        DESTROY
        CURRENT NODE
=====

```

```

C NODE 1 ALL ALLOCATE CURRENT NODE
$PRIORITY RPRUC EXECUTE THE CALLED PROCESS
MSG PROCESS SET PRIORITY FOR REQ PROC
MSG RPRUCPRI
PRIORITY WAIT PRIORITY WAIT UNTIL COMPLETE
PROCESS
MSG
CALL GIVEN
RETURN DEALLOC
COMPARE
ASSIGN $REQMORE
MSG $RESP
MSG TYPE
MSG FNODE
MSG TNODE
MSG CNODE
MSG FNODE
CALL CHANPROC WAIT 0
GIVEN MSG
BRANCH END 100
ENTRY DESTROY MSG
ENTRY DESTROY MSG
END

```

```

TERMINATE MESSAGE AT DEST
TERMINATE MSG

```

LOCAL VARIABLES OF PROCESS DESTPROC

```

=====
1 MSG (1) 2 C NODE 3 PROCESS (X) 4 PRIORITY
5 CHANPROC (P)
=====

```

```

PROCESS
WNEMONIC
=====

```

```

DISK_OP
=====

```

DESCRIPTION

```

=====
OPERATION OF DISK
=====

```

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START				NO	
GIVEN	LENGTH	DISK			MAKE DISK SPEED = V_SPEED
ASSIGN	DISK	SPEED			
	V	SPEED			TRANSFER TIME CALCULATED
EVAL	XFER TIME				
	LENGTH/V	SPEED			
ALLOC	DISK		ALL		DISK ALLOCATED
	\$PRIORITY				
ASSIGN	DISK	SEEK			MAKE SEEKTIME = SEEK
	SEEKTIME				
SEEK	UNIFORM	SEEKTIME	SEEKTIME	TIME FOR SEEK IS CONSUMED	

```

=====
WSECONDS RESUME
DISK LATENCY
LATENCY MAKE DISK LATENCY=LATETIME
UNIFORM LATETIME LATETIME TIME CONSUMED FOR LATENCY
WSECONDS RESUME
CONSTANT XFERTIME TRANSFER TIME CONSUMED
WSECONDS RESUME
DEALLOC DISK 1 DISK RESOURCE DEALLOCATED
END
=====

```

```

LOCAL VARIABLES OF PROCESS DISK_OP
=====
1 LENGTH 2 DISK 3 V SPEED 4 XFERTIME
6 SEEKTIME 6 SEEK (A) 7 LATETIME 8 LATENCY (A)
9 XFER (A)
=====
PROCESS DESCRIPTION
MNEMONIC HQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES
=====
HQ_DATA
=====

```

```

=====
ENTRY OPCODE PARM PARM PARM COMMENT
=====
START NO
MSG MSG
RETURN MSG
ASSIGN LENGTH
V_LENGTH V_LENGTH
VTIME VTIME
EVAL 815*V LENGTH
UPDATE CONSTANT VTIME
WSECONDS RESUME
PROCESSING TIME CONSUMED
END
=====

```

```

LOCAL VARIABLES OF PROCESS HQ_DATA
=====
1 MSG (1) 2 V_LENGTH 3 V_TIME 4 UPDATE (A)
=====

```

```

=====
PROCESS DESCRIPTION
MNEMONIC HQ REQUEST FOR STATUS DISPLAY FROM CHQ
=====
HQ_REQ
=====
ENTRY OPCODE PARM PARM PARM COMMENT
=====
START L3 NO
GIVEN MSG
RETURN MSG
=====

```


PAGE 13

CALL	WRS	WAIT	4	MAKES I/O REQUEST TO CHQ
GIVEN	PLANS	4	\$REQRESP	
	200	CHQ	MSG	

END

LOCAL VARIABLES OF PROCESS HQ_REQ

1 MSG	(I)	2 MRS	(P)	3 PLANS	(P)	4 CHQ	(R)

PROCESS

MNEMONIC

WRS

DESCRIPTION

GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START	ALL	NO			
GIVEN	PROCESS	PRIORITY	MSG_TYPE		
	MSG_LNTH	TO_NODE	MSG		
CREATE	MSG_LNTH	LENGTH			CREATE MESSAGE
ASSIGN	MSG_LNTH	MSG			SET MESSAGE LENGTH
ASSIGN	PROCESS	RPROC			SET PROCESS
ASSIGN	PRIORITY	RPROCPR			SET PRIORITY
ASSIGN	TO_NODE	TNODE			SET DESTINATION
ASSIGN	MSG_TYPE	TYPE			SET MESSAGE TYPE
CALL	NODEPROC	WAIT	0		EXECUTIVE SERVICING OF MSG
GIVEN	MSG				
END					

LOCAL VARIABLES OF PROCESS MRS

1 PROCESS	(X)	2 PRIORITY	(I)	3 MSG_TYPE	(P)	4 MSG_LNTH
5 TO_NODE	6 MSG	7 NODEPROC				

PROCESS

MNEMONIC

NODEPROC

DESCRIPTION

NODAL PROCESSING AND ROUTING

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START	ALL	NO			
GIVEN	MSG				

```

=====
ASSIGN MSG CNODE INDICATE CURRENT NODE
C_NODE M_ROUTE PROCESSING RATE OF NODE
RT_OVHD LENGTH GET MESSAGE LENGTH
MSG MSG LNTH COMPUTE PROCESSING DELAY
OVERHEAD MSG LNTH RT_OVHD ALL ALLOCATE CURRENT NODE
C_NODE 1 -- DELAY FOR ROUTING
$PRIORITY CONSTANT OVERHEAD
ROUTE_OH MSFCONDS RESUME
DEALLOC C_NODE 1 EQ RELEASE C_NODE TO OTHERS
COMPARE MSG CNODE TNODE CONTROL IS MSG AT DESTINATION?
CALL CHANPROC WAIT 0 FORWARD MSG TO CHANNEL
GIVEN MSG MESSAGE AT DESTINATION
BRANCH END 100 CONTEXT SWITCH MESSAGE
ENTRY CALL DESTPROC WAIT 0
GIVEN MSG
END ENTRY MSG
END
=====

```

LOCAL VARIABLES OF PROCESS NODEPROC

```

=====
1 MSG (1) 2 C_NODE 3 RT_OVHD 4 MSG LNTH
5 OVERHEAD 6 ROUTE_OH (A) 7 CHANPROC (P) 8 DESTPROC (P)
=====

```

PROCESS

MNEMONIC

PLANS

DESCRIPTION

```

=====
REQUEST FOR PLANS FROM CHQ
=====

```

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START	CHQ	NO			
GIVEN	MSG				
RETURN	MSG	LENGTH			MAKE MSG LENGTH = V_LENGTH
ASSIGN	MSG	V_LENGTH			EVALUATE MSG PROCESS TIME
EVAL	V_TIME	.01 * V_LENGTH			TIME USED TO FORMAT PLANS
FORMAT	CONSTANT V_TIME				CALLING PROCESS DISK_OP
CALL	MSFCONDS RESUME				
DISK_OP	WAIT	10			
GIVEN	500	DK1			
ASSIGN	500				INCREASE MSG LENGTH

```

PAGE 15      MSG      LENGTH
END

LOCAL VARIABLES OF PROCESS PLANS
=====
1 MSG      (1) 2 V LENGTH      3 V_TIME      4 FORMAT      (A)
5 DISK_OP  (P) 6 DR1      (R)
PROCESS
MNEWMONIC
=====
TRACE      TURN ON TRACE OUTPUT
=====

ENTRY      OPCODE  PARM      PARM      COMMENT
=====
START      ALL      NO
COMPARE    V_TRACE  0_
TRACE      ON
TRACE      ON
NOTRACE    ENTRY
END

GLOBAL VARIABLES OF PROCESS TRACE
=====
1 V_TRACE  (C)
=====
LOAD DEFINITION.....

LOAD
MNEWMONIC
=====
ABLOAD
=====
LOAD      NODES
=====
AB1      AB2

PROCESS    SCHEDULE
MNEWMONIC MAX #    METHOD    MEAN    DELTA    UNITS    PRIORITY
=====
AB DATA   60      INTERVAL  ABRATE
AB_REQ     60      EXPONENT  ABRATE
=====
LOAD
MNEWMONIC
=====
HQLoad
=====
LOAD      REQUEST DATA FROM CHQ
=====
LOAD      NODES
=====

```

PROCESS MNEMONIC	MAX #	SCHEDULE METHOD	MEAN	DELTA	UNITS	PRIORITY
HQ_REQ	60	EXPONENT	HQRRATE		MSECONDS	4

SCENARIO DEFINITION....

SCENARIO MNEMONIC	DESCRIPTION
TEST01	SCENARIO FOR MINI MITRE 1

PERIOD LENGTH	UNITS	OUTPUT
360	SECONDS	SECONDS

PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC
1	2	3	4	5	6	7
PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC	PERIOD MNEMONIC
8	9	10				

TRIGGER MNEMONIC	TIME TO SCHEDULE	SCHEDULE PRIORITY	TRIGGER MNEMONIC	TIME TO SCHEDULE	SCHEDULE PRIORITY
ABLOAD	0	MSECONDS	HQLOAD	0	MSECONDS
TRACE	0	MSECONDS			

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX B

Test 1 Model - File Verification

TESTDBE.DBF Listing

```

#####
$ SIMULATION REPORT $
$   AISIM VERSION 5.0 $
$   HUGHES AIRCRAFT COMPANY $
$   05/15/87 $
#####

```

04/21/1987 09:54:33

TESTDRE

TEST ARITHMETIC FUNCTIONS.

GLOBAL CONSTANT DEFINITION.....

```

CONSTANT INITIAL      COMMENT
MNEMONIC VALUE =====
=====

```

FILE DEFINITION.....

```

FILE
MNEMONIC      COMMENT
=====
=====

```

TABLE DEFINITION....

```

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

```

```

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

```

```

TABLE
MNEMONIC TYPE  DESCRIPTION

```

```

=====
TCON 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
=====

```

```

=====
TABLE MNEMONIC TYPE DESCRIPTION
=====
T01S 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
MNEMONIC VALUE COMMENT
=====
VABS 10.0 TEST EVAL ABSOLUTE RESULT
VADD 10.0 TEST EVAL ADD RESULT
VARCOS 2.0 TEST EVAL ARCSINE RESULT
VARCSIN 1.141593 TEST EVAL ARCSINE RESULT
VARCTAN -1.14169 TEST EVAL ARCTAN RESULT
VBETA 10.0 TEST EVAL BETA RESULT
VBIN 0.5 TEST EVAL BINOMIAL RESULT
VCOMP1 0.0 TEST COMPLEX EVALUATION
VCOMP2 0.0 TEST COMPLEX EVALUATION
=====

```

PAGE 3
 VCOMP3 0.0 TEST COMPLEX EVALUATION
 VCOMP4 0.0 TEST COMPLEX EVALUATION
 VCOS - 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 ERLANG DISTRIBUTION
 VEXP 10.0 TEST EVAL EXPONENTIAL RESULT
 VEXP10 100.0 TEST EVAL EXPONENT 10 RESULT
 VEXPE 100.0 TEST EVAL EXPONENT E RESULT
 VGAMMA 10.0 TEST EVAL GAMMA RESULT
 VLOG10 2.0 TEST EVAL LOG 10 RESULT
 VLOGE 4.606170 TEST EVAL LOG E RESULT
 VLOGN 10.0 TEST EVAL LOGNORMAL RESULT
 VMULT 10.0 TEST EVAL MULTIPLY RESULT
 VNBUSYQ 0 TEST ASSIGN NBUSYQ
 VNIDLEQ 0 TEST ASSIGN NIDLEQ
 VNORMAL 10.0 TEST EVAL NORMAL RESULT
 VNWAITQ 0 TEST ASSIGN NWAITQ
 VPOISSON 110.0 TEST EVAL POISSON RESULT
 VPOWER 10.0 TEST EVAL POWER RESULT
 VRAN 0.5 TEST EVAL RANDOM RESULT
 VSIN 0.909297 TEST EVAL SINE RESULT
 VSQRT 10.0 TEST EVAL SQRT RESULT
 VSUB 10.0 TEST EVAL SUBTRACT RESULT
 VTAN -2.18604 TEST EVAL TANGENT RESULT
 VUNIFORM 10.0 TEST EVAL UNIFORM RESULT
 VWEIBULL 10.0 TEST EVAL WEIBULL RESULT

ITEM DEFINITION.....

QUEUE DEFINITION.....

QUEUE MNEMONIC	MAXIMUM SIZE	COMMENT
=====	=====	=====

RESOURCE DEFINITION.....

RESOURCE MNEMONIC	TOTAL # UNITS	INITIAL # UNITS	DESCRIPTION
=====	=====	=====	=====
RES1	2	2	TEST RESOURCE 1
=====	=====	=====	=====
ATTR.	NAME	INITIAL VALUE	
=====	=====	=====	
ATTR1	10		
ATTR2	16		

ARCHITECTURE LEGAL PATH DEFINITION

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

ACTION DEFINITION.....

ACTION COMMENT
 MNEMONIC
 =====
 EVALUATE TEST EVAL FUNCTIONS
 PROCESS TEST DISTRIBUTION FUNCTIONS

PROCESS DEFINITION.....

PROCESS DESCRIPTION
 MNEMONIC
 =====
 OFD1 TEST EXPONENTIAL DISTRIBUTION AND COMPARE

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	ALL	NO		
	CALL	OFDINIT	NOWATT	0	INITIATE ODS 0-10
	PROCESS	EXPONENT	100.0		TEST EXPONENTIAL ACTION
	ASSIGN	SECONDS	RESUME		
		1.0			
		LOCAL1			
	ASSIGN	2.0			
		LOCAL2			
	ASSIGN	3.0			
		LOCAL3			
TESTEQ	ENTRY	LOCAL1		EQ	TEST COMPARE EQ
	COMPARE	LOCAL2		EQTEST	
EQTEST	BRANCH	EQTEST	100		TEST FALL THRU
	ENTRY	LOCAL3		EQ	
	COMPARE	LOCAL3		TESTNE	
TESTNE	BRANCH	TESTNE	100		TEST FALL THRU
	ENTRY	LOCAL3		NE	TEST COMPARE NE
	COMPARE	LOCAL3		NETEST	
NETEST	BRANCH	NETEST	100		
	ENTRY				

PAGE	5	COMPARE	LOCAL1	NE	TESTLT	TEST FALL THRU
TESTLT		BRANCH ENTRY	TESTLT 100			TEST COMPARE LT
LTTEST		COMPARE	LOCAL3	LT		
		BRANCH ENTRY	TESTLT 100	LTTEST		TEST FALL THRU
		COMPARE	LOCAL1	LT		
TESTGT		BRANCH ENTRY	TESTGT 100	TESTGT		TEST FALL THRU
		COMPARE	LOCAL2	GT		TEST COMPARE GT
GTTEST		BRANCH ENTRY	TESTGT 100	GTTEST		TEST FALL THRU
		COMPARE	LOCAL1	GT		
TESTLE		BRANCH ENTRY	TESTLE 100	TESTLE		TEST FALL THRU
		COMPARE	LOCAL3	LE		TEST COMPARE LE
LETEST1		BRANCH ENTRY	TEST1 100	LETEST1		TEST FALL THRU
		COMPARE	LOCAL2	LE		
LETEST2		BRANCH ENTRY	TEST2 100	LETEST2		TEST FALL THRU
		COMPARE	LOCAL1	LE		
TESTGE		BRANCH ENTRY	TESTGE 100	TESTGE		TEST FALL THRU
		COMPARE	LOCAL3	GE		TEST COMPARE GE
GETEST1		BRANCH ENTRY	TEST1 100	GETEST1		TEST FALL THRU
		COMPARE	LOCAL2	GE		
GETEST2		BRANCH ENTRY	TEST2 100	GETEST2		TEST FALL THRU
		COMPARE	LOCAL3	GE		
TESTEND		BRANCH ENTRY	TESTEND 100	TESTEND		TEST FALL THRU
		END				END OFD COMPARE TESTING

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

PAGE 6
5 LOCAL3
PROCESS
WNEUMONIC
OFD10

DESCRIPTION
TEST INTERVAL SCHEDULE AND EVAL TRIG FUNCTIONS

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
EVAL	VLOG10				
EVAL	LOG10(100.0)				
EVAL	VEXP10				
EVAL	10.0**VLOG10				
EVAL	VLOGE				
EVAL	LOGE(100.0)				
EVAL	VEXPE				
EVAL	2.718281**VLOGE				
EVAL	VSIN				
EVAL	SINE(2)				
EVAL	VARCSIN				
EVAL	ARCSINE(VSIN)				
EVAL	VCOS				
EVAL	COSINE(2)				
EVAL	VARCOS				
EVAL	ARCOSINE(VCOS)				
EVAL	VTAN				
EVAL	TANGENT(2)				
EVAL	VARCTAN				
EVAL	ARCTAN(VTAN)				
					END

GLOBAL VARIABLES OF PROCESS OFD10

1	VLOG10				
2	VEXP10				
3	VLOGE				
4	VEXPE				
5	VSIN				
6	VARCSIN				
7	VCOS				
8	VARCOS				
9	VTAN				
10	VARCTAN				

PROCESS
WNEUMONIC
OFD11

DESCRIPTION
TEST ALLOCATE & DEALLOCATE RESOURCE

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
ALLOC	RES1	1			
PROCESS	PRIORITY		ALL		TEST ALLOCATE
	CONSTANT	100.0			

LOCAL VARIABLES OF PROCESS OFD11
 =====
 1 RES1 (R) 2 PROCESS (A)
 =====
 PROCESS DESCRIPTION
 ANEMONIC
 =====
 OFD12 TEST COMPLEX ARITHMETIC EVALUATIONS
 =====

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START	ALL	NO			
EVAL	VCOMP1				
		RES1[ATTR1] + (RES1[NIDLEQ]			
		+ TDIS(1))			
EVAL	VCOMP2				
		20.5 * 2.3 - RES1[ATTR3]			
EVAL	VCOMP3				
		INTEGER(RANDOM*10) + 5			
EVAL	VCOMP4				
		EXPONENT(10.0) * (RES1[ATTR2]			
		) * TCON(2))			
END					

LOCAL VARIABLES OF PROCESS OFD12
 =====
 1 RES1 (R) 2 TDIS (T) 3 TCON (T)

GLOBAL VARIABLES OF PROCESS OFD12
 =====
 1 VCOMP1 2 VCOMP2 3 VCOMP3 4 VCOMP4

PROCESS DESCRIPTION
 ANEMONIC
 =====
 OFD2 TEST LOGNORMAL DISTRIBUTION AND ASSIGN
 =====

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START	ALL	NO			
ASSIGN	RES1	NIDLEQ			
		VNIDLEQ			
ASSIGN	RES1	NBUSYQ			
		VNBUSYQ			

```

PAGE 8
CALL      ASSIGN      RES1      NWAITQ
          ENTRY      VNWAITQ
          CALL      OFD11      NWAIT      2.0
          LOOP      CALL      4
          PROCESS    LOGNORML  10.0      2.0
          ASSIGN     RES1      SECONDS  RESUME
          ASSIGN     VNIDLEQ   RES1      MIDDLEQ
          ASSIGN     RES1      NBUSYQ
          ASSIGN     RES1      VNBUSYQ
          ASSIGN     RES1      NWAITQ
          VNWAITQ
          END

LOCAL VARIABLES OF PROCESS OFD2
=====
1 RES1 (R) 2 OFD11 (P) 3 PROCESS (A)
=====

GLOBAL VARIABLES OF PROCESS OFD2
=====
1 VNIDLEQ 2 VNBUSYQ 3 VNWAITQ
=====
PROCESS
MNEMONIC DESCRIPTION
=====
OFD3 TEST NORMAL DISTRIBUTION
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
PROCESS NORMAL 100.0 100.0
SECONDS RESUME
END

LOCAL VARIABLES OF PROCESS OFD3
=====
1 PROCESS (A)
=====
PROCESS
MNEMONIC DESCRIPTION
=====
OFD4 TEST UNIFORM DISTRIBUTION
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
PROCESS UNIFORM 100.00 100.00
SECONDS RESUME

```

9

030

11

PROCESS

DESCRIPTION

TEST EPI AND DISTRIBUTION

COMMENT

NO

19

END

PROCESS OFD5

—

Subjects

DESCRIPTION

TEST WE TAIL! DISTRIBUTION

COMMENT

20

100

END

PROCESS DEF08

—

333

DESCRIPTION

TEST CAMERA DISTRIBUTION

COMMENT

30

23

SECOND RESUME

UN3

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

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
	START	ALL	NO		
	EVAL	VRAN			
		RANDOM			
	EVAL	VBIN			
	EVAL	BINOMIAL(100.0,10.0)			
		VBETA			
		BETA(10.0,5.0)			
	EVAL	VERLANG			
		ERLANG(10.0,5.0)			
	EVAL	VEXP			
		EXPONENT(10.0)			
	EVAL	VGAMMA			
		GAMMA(10.0,5.0)			
	EVAL	VLOGN			
		LOGNORMAL(10.0,5.0)			
	EVAL	VNORMAL			
		NORMAL(10.0,5.0)			
	EVAL	VPOISSON			
		POISSON(10.0)			
	EVAL	VUNIFORM			
		UNIFORM(10.0,5.0)			
	EVAL	VWEIRULL			
		WEIRULL(10.0,5.0)			
	END				

```

=====
GLOBAL VARIABLES OF PROCESS OFD8
=====
1 VRAN
5 VEXP
9 VPOISSON
2 VBIN
6 VGAMMA
10 VUNIFORM
3 VBETA
7 VLOGN
11 VWEIBULL
4 VERLANG
8 VNORMAL
=====
PROCESS
=====
MNEUMONIC DESCRIPTION
=====
TESTSTART SCHEDULE AND CONSTANT ACTION
OFD9
=====

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT

PAGE 11

```
=====
START      ALL      NO
EVALUATE   CONSTANT 100.00
SECONDS    RESUME
TEST
END
=====
```

LOCAL VARIABLES OF PROCESS OFD9

```
=====
1 EVALUATE (A)
=====
PROCESS
=====
DESCRIPTION
=====
OFD INITIATOR FOR 6 THROUGH 10
=====
```

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

LOCAL VARIABLES OF PROCESS OFDINIT

```
=====
1 COUNTER
=====
PROCESS
=====
DESCRIPTION
=====
TEST TIME CALL SCHEDULE AND EVAL ARITHMETIC/TABLE
=====
```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
EVAL	VADD				
	20.5+(-10.5)				
EVALUATE	CONSTANT	100.0			
	SECONDS	RESUME			
EVAL	VSUB				


```

0.5-(-3.5)
EVALUATE CONSTANT VSUB
SECONDS RESUME
EVAL VMULT
-2.5*(-4.0)
EVALUATE CONSTANT VMULT
SECONDS RESUME
EVAL VDIV
-4.0/(-0.40)
EVALUATE CONSTANT VDIV
SECONDS RESUME
EVAL VPOWER
3.162277*2.0
EVALUATE CONSTANT VPOWER
SECONDS RESUME
EVAL VSQRT
SQRT(100.0)
EVALUATE CONSTANT VSQRT
SECONDS RESUME
EVAL VABS
ABSOLUTE(-10.0)
EVALUATE CONSTANT VABS
SECONDS RESUME
EVAL VCTABLE
TCON(-50)
EVAL VDTABLE
TDIS(-50.0)
EVAL VCTABLE
TCON(1050.0)
EVAL VDTABLE
TDIS(1050.0)
EVAL VCTABLE
TCON(150.0)
EVAL VDTABLE
TDIS(150.0)
EVAL VCTABLE
TCON(250.0)
EVAL VDTABLE
TDIS(250.0)
EVAL VCTABLE
TCON(500.0)
EVAL VDTABLE
TDIS(500.0)
EVAL VCTABLE
TCON(750.0)
EVAL VDTABLE
TDIS(750.0)
EVAL VCTABLE
TCON(850.0)

```

PAGE 13

EVAL VDTABLE
TDIS(850.0)

END

LOCAL VARIABLES OF PROCESS TIMECALL

===== (1) 3 TDIS (1)

1 EVALUATE (A) 2 TCON

GLOBAL VARIABLES OF PROCESS TIMECALL

===== 4 VDIV 8 VCTABLE

1 VADO 2 VSUB 3 VMULT 7 VABS

5 VPOWER 6 VSQRT

9 VDTABLE

LOAD DEFINITION

LOAD

DESCRIPTION

=====

TEST SCHEDULE METHODS

LOAD1

=====

RES1

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

LOAD

DESCRIPTION

=====

TEST COMPLEX ARITHMETIC

LOAD2

=====

RES1

PROCESS	MAX #	SCHEDULE	MEAN	DELTA	UNITS	PRIORITY
=====	=====	=====	=====	=====	=====	=====
OFD12	1	START			SECONDS	2.0

SCENARIO DEFINITION

```

PAGE 14
SCENARIO
MNEMONIC
=====
TEST1 =====
DESCRIPTION
=====
TEST SCHEDULING METHODS
=====
PERIOD PERIOD OUTPUT
LENGTH UNITS
=====
10000 SECONDS
=====
PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC
=====
1
=====
TRIGGER TIME TO SCHEDULE SCHEDULE TRIGGER TIME TO SCHEDULE SCHEDULE
MNEMONIC SCHEDULE UNITS PRIORITY MNEMONIC SCHEDULE UNITS PRIORITY
=====
LOAD1 0 SECONDS 0 LOAD2 0 SECONDS 0
TIMECALL 5000 SECONDS 0
=====
#### 0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

```

APPENDIX B

Test 1 Model - File Verification

TESTDBF.DBF Listing

TESTDBF

TEST ERROR HANDLING OF ARITHMETIC EXPRESSIONS

GLOBAL CONSTANT DEFINITION.....

[illegible]

FILE DEFINITION.....

FILE	COMMENT
FILE	COMMENT

TABLE DEFINITION....

TABLE	DESCRIPTION
=====	=====
MNEMONIC	TYPE
=====	=====
TDIS	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

PAGE 2

600 0 60 0
700 0 70 0
800 0 80 0
900 0 90 0

GLOBAL VARIABLE DEFINITION.....

VARIABLE MNEMONIC	INITIAL VALUE	COMMENT
VCOMP1	0 0	TEST COMPLEX EVALUATION
VCOMP2	0 0	TEST COMPLEX EVALUATION
VCOMP3	0 0	TEST COMPLEX EVALUATION
VCOMP4	0 0	TEST COMPLEX EVALUATION
VCOMP5	0 0	TEST COMPLEX EVALUATION
VOTABLE	50 0	TEST EVAL DISCRETE TABLE RESULT

ITEM DEFINITION.....

QUEUE DEFINITION.....

QUEUE MNEMONIC	MAXIMUM SIZE	COMMENT

RESOURCE DEFINITION.....

RESOURCE	TOTAL MNEMONIC	INITIAL # UNITS	DESCRIPTION
RES1	2	2	TEST RESOURCE 1
	ATTR	INITIAL	
	HAVE	VALUE	
	ATTR1	10	
	ATTR2	15	
	ATTR3	-8	

ARCHITECTURE LEGAL PATH DEFINITION

FROM DEVICE	TO DEVICE	NEXT DEVICE	VIA LINK

ACTION DEFINITION.....

ACTION MNEMONIC	COMMENT

PAGE 3

PROCESS DEFINITION

PROCESS
MNEMONIC

DESCRIPTION

OFD1

TEST COMPLEX ARITHMETIC EVALUATIONS

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
EVAL	VCOMP1				

RES1[ATTR1]*(RES1[NIDIEFQ]

* TDIS(1)* 12

ERROR - EXPRESSION DOES NOT TERMINATE CORRECTLY

- UNMATCHED LEFT PARENTHESIS

EVAL

VCOMP2

20.5 * 2.3 - RES1[ATTR3]

EVAL

VCOMP3

INTEGER[RANDOM*10] * 5

ERROR - FUNCTION NAME FOLLOWED BY INVALID CHARACTER "[

- USE PARENTHESES TO ENCLOSE OPERANDS

- ERROR DETECTED NEAR "INTEGER(R

EVAL

VCOMP4

EXPONENT(10.0)*(RES1[ATTR2

]TDIS(2))

ERROR - A VALID EXPRESSION IS PRECEDED OR FOLLOWED BY AN

INVALID STRUCTURE

- ERROR DETECTED NEAR "S1[ATTR2]TDIS(2"

EVAL

VDTABLE

TDIS[860.0]

EVAL

VCOMP5

RES1(ATTR1)*16

END

LOCAL VARIABLES OF PROCESS OFD1

1	RES1	(R)	2	TDIS	(T)	3	ATTR1

GLOBAL VARIABLES OF PROCESS OFD1

1	VCOMP1	2	VCOMP2	3	VCOMP3	4	VCOMP4
5	VDTABLE	6	VCOMP6				

LOAD DEFINITION

LOAD

```

PAGE 4
MNEMONIC =====
LOAD1  TEST SCHEDULE METHODS
=====
LOAD  NODES
=====
RES1
=====

PROCESS SCHEDULE
MNEMONIC MAX # METHOD MEAN DELTA UNITS PRIORITY
=====
OFD1 1 START 100 SECONDS 2.0
=====

SCENARIO DEFINITION....

SCENARIO
MNEMONIC =====
TEST1  TEST SCHEDULING METHODS
=====

PERIOD OUTPUT
LENGTH UNITS
=====
100 SECONDS SECONDS
=====

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC
=====
1
=====

TRIGGER TIME TO SCHEDULE SCHEDULE TRIGGER TIME TO SCHEDULE SCHEDULE
MNEMONIC SCHEDULE UNITS PRIORITY MNEMONIC SCHEDULE UNITS PRIORITY
=====
LOAD1 0 SECONDS 0
=====

#### 3 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

```


APPENDIX C

Results Verification for
TESTDBA.DBF through TESTDRF.DBF

APPENDIX C

Results Verification for

TESTDBA.DBF

04/22/1987 17:19:07

TESTDBA

TEST ITEMS, RESOURCE PREEMPTION, CALL PROCESS, AND ACTION RESTART LOGIC

PAGE 18

SIMULATION TIME = 100.00000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES...

	TOTAL	VARIABLE SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
C_TRACE	1	1	1.000	1.000	0.	1.000	1.000
V_COUNT1	1	1	10.000	10.000	0.	10.000	10.000

NON-NUMERIC VARIABLES...

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

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SIMULATION TIME = 100.00000 SECONDS

ITEM REPORT

ITEM NAME	NUMBER CREATED	NUMBER DESTR'D	TIME IN SYSTEM			STD DEV...
			MINIMUM...	MAXIMUM...	AVERAGE...	
AIITEM1	10	9	10.00	90.00	50.00	25.82
AIITEM2	10	9	10.00	90.00	50.00	25.82
AIITEM3	10	9	10.00	90.00	50.00	25.82
AIITEM4	9	9	0.	0.	0.	0.
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.

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SIMULATION TIME = 100.00000 SECONDS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
=====						
CPU1						
# IDLE		0.	2.700	2.769	0.	8.000
REQUEST TIME			0.645	1.291	0.	5.000
HOLD TIME	30		3.000	1.414	1.000	5.000
=====						
INTO BUSY	110					
OUT OF BUSY	102					
# BUSY		8.000	4.400	2.108	0.	8.000
BUSY TIME			4.020	2.429	1.000	10.000
# INACTIVE		0.	0.	0.	0.	0.
=====						
INTO WAIT	22					
OUT OF WAIT	22					
# WAITING		0.	0.300	0.468	0.	1.000
WAIT TIME			1.384	1.823	0.	5.000
=====						
CURRENTLY ALLOCATED TO PROCESSES:						
		PLONG1	PSHRT1	PSHRT1	PSHRT1	PSHRT1
		PSHRT1				

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
=====						
CPU2						
# IDLE		4.000	2.900	2.731	0.	8.000
REQUEST TIME			0.211	0.554	0.	2.000
HOLD TIME	39		1.016	0.626	0.	2.000
=====						
INTO BUSY	155					
OUT OF BUSY	151					
# BUSY		4.000	4.410	2.303	0.	8.000
BUSY TIME			2.841	1.780	0.	7.000
# INACTIVE		0.	0.	0.	0.	0.
=====						
INTO WAIT	31					
OUT OF WAIT	31					

WAITING 0. 0.100 0.384 0. 2.000
WAIT TIME 0.581 0.908 0. 2.000

CURRENTLY ALLOCATED TO PROCESSES: PSHRT2 PLONG2 PLONG2

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL	CURRENT...	MEAN...	STD DEV...	MINIMUM...	MAXIMUM...
CPU3	NUMBER					
# IDLE	0.	2.640	2.674	0.	0.	8.000
REQUEST TIME		0.595	1.177	0.	0.	4.000
HOLD TIME	39	1.846	0.602	1.000		3.000
INTO BUSY	122					
OUT OF BUSY	114					
# BUSY	8.000	4.400	2.108	0.	0.	8.000
BUSY TIME		3.598	2.808	0.	0.	10.000
# INACTIVE	0.	0.240	0.814	0.	0.	3.000
INTO WAIT	26					
OUT OF WAIT	26					
# WAITING	0.	0.300	0.458	0.	0.	2.000
WAIT TIME		1.154	1.747	0.	0.	5.000

CURRENTLY ALLOCATED TO PROCESSES: PLONG3 PSHRT3 PSHRT3 PSHRT3

PROCESSES CURRENTLY WAITING: NONE

RESOURCE	TOTAL	CURRENT...	MEAN...	STD DEV...	MINIMUM...	MAXIMUM...
TESTRES	NUMBER					
# IDLE	0.	0.440	1.275	0.	0.	8.000
REQUEST TIME		3.109	4.860	0.	0.	17.000
HOLD TIME	112	1.438	0.998	0.	0.	3.000
INTO BUSY	176					
OUT OF BUSY	168					
# BUSY	7.000	6.930	1.639	0.	0.	8.000
BUSY TIME		3.452	1.112	1.000		5.000

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INACTIVE

0.

0.

0.

0.

0.

0.

0.

0.

INTO WAIT 90
OUT OF WAIT 87

WAITING
WAIT TIME

6.000
26.000

0.

0.

0.

0.

0.

0.

0.

CURRENTLY ALLOCATED
TO PROCESSES:

ACYCLIC
ATEST

ACYCLIC
ATEST

ATEST

ATEST

ATEST

PROCESSES CURRENTLY
WAITING:

ATEST
ATEST

ATEST
ATEST

ATEST

ATEST

ATEST

SIMULATION TIME = 100.00000 SECONDS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
DELAY						
USEFUL TIME	400	2.135	3.200	1.000	20.000	995.000
DELAY TIME	400	0.039	0.357	0.	4.000	
WASTED TIME	0	0.	0.	0.	0.	
TOTAL						
SAMPLES	800					
MEAN		2.135	3.200	1.000	20.000	995.000
STD DEV		0.039	0.357	0.	4.000	
MINIMUM		0.	0.	0.	0.	
MAXIMUM						
% TIME						
OF TOTAL						
LNGDELAY						
USEFUL TIME	2	4.000	0.	4.000	4.000	8.000
DELAY TIME	2	4.000	0.	4.000	4.000	
WASTED TIME	2	5.000	1.000	4.000	6.000	
TOTAL						
SAMPLES	6					
MEAN		4.000	0.	4.000	4.000	8.000
STD DEV		0.	0.	4.000	4.000	
MINIMUM		0.	0.	4.000	4.000	
MAXIMUM						
% TIME						
OF TOTAL						
MEDDELAY						
USEFUL TIME	3	4.000	0.	4.000	4.000	12.000
DELAY TIME	3	3.887	0.471	3.000	4.000	
WASTED TIME	3	5.000	1.414	3.000	6.000	
TOTAL						
SAMPLES	9					
MEAN		4.000	0.	4.000	4.000	12.000
STD DEV		3.887	0.471	3.000	4.000	
MINIMUM		3.000	0.471	3.000	4.000	
MAXIMUM						
% TIME						
OF TOTAL						
SRTDELAY						
USEFUL TIME	2	4.000	0.	4.000	4.000	8.000
DELAY TIME	2	4.000	0.	4.000	4.000	
WASTED TIME	2	5.500	0.500	5.000	6.000	
TOTAL						
SAMPLES	6					
MEAN		4.000	0.	4.000	4.000	8.000
STD DEV		4.000	0.	4.000	4.000	
MINIMUM		4.000	0.	4.000	4.000	
MAXIMUM						
% TIME						
OF TOTAL						

SIMULATION TIME = 100.00000 SECONDS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
ACYCLIC	0	0.	0.	0.	0.	0.
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	85	0.	0.	0.	0.	0.

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

=====

PROCESS	DESCRIPTION	OPCODE	PARM	PARM	PARM	COMMENT
ACYCLIC	CYCLIC ACTION RESTART CONTROL PROCESS	START	ALL	NO		

CYCLE CONTROL LOOP

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	LOOP	START	ALL	NO		
8	ENTRY	ALLOC	TESTRES	1	PARTIAL	
8		DELAY	CONSTANT	1		
8		SECONDS	RESUME			
8		ALLOC	TESTRES	1	PARTIAL	
8		DELAY	CONSTANT	1		
8		SECONDS	RESUME			
7		ALLOC	TESTRES	1	PARTIAL	
7		DELAY	CONSTANT	1		
7		SECONDS	RESUME			
7		ALLOC	TESTRES	1	PARTIAL	
7		DELAY	CONSTANT	1		
7		SECONDS	RESUME			
7		ALLOC	TESTRES	1	PARTIAL	
7		DELAY	CONSTANT	1		
7		SECONDS	RESUME			
7		ALLOC	TESTRES	1	PARTIAL	
7		DELAY	CONSTANT	1		
7		SECONDS	RESUME			
7		DEALLOC	TESTRES	1		

[illegible]

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
AJTEST						
TOTAL	7	150.000	21.429	9.439	10.000	38.000
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	22	113.000	5.136	7.244	0.	28.000

TOTAL # SCHEDULE	# AUTO SCHEDULE	# CALL SCHEDULE	# OF COMPLETE	# NOT COMPLETE	# TIMES SUSPEND.
11	0	11	7	4	60

[illegible]

```

=====
===== ACTION RESTART PROCESS WHICH GETS INTERRUPTED =====
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
11 START ALL NO
11 GIVEN STATACTN
11 ALLOC TESTRES 5 PARTIAL
11 10
22 STATACTN CONSTANT 4
22 SECONDS RESTART
7 DEALLOC TESTRES 5
7 END
=====

```

```

=====
TOTAL
PROCESS SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM. ... MAXIMUM. ...
=====
ATRIGGER
TOTAL 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 SUSPEND.
=====
1 1 0 0 1 0
=====

```

```

=====
PROCESS DESCRIPTION
=====
ATRIGGER TRIGGER ACTION RESTART TEST PROCESS
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
1 START ALL NO
4 LOOP
4 ENTRY ATEST NOWAIT 0
4 CALL MEDDELAY
4 GIVEN CONSTANT 12
4 DELAY SECONDS RESUME
4 ATEST NOWAIT 0
4 CALL LNGDELAY
4 GIVEN CONSTANT 13
4 DELAY SECONDS RESUME
4 ATEST NOWAIT 0
3 CALL SRTDELAY
3 GIVEN CONSTANT 3
3 DELAY SECONDS RESUME
3 LOOP
3 5
0 END
=====

```

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 COMPLETE SUSPEND.						
1	1	0	1	0	0	0

PROCESS	DESCRIPTION
INIT1	TEST CALL BLOCK
COUNT ENTRY	OPCODE PARM PARM PARM COMMENT
1	START ALL NO
1	ASSIGN 1
1	ENTRY L
11	COMPARE L
11	V COUNT1 GT
11	PROCESS1 BLOCK WAIT
10	L
10	GIVEN L
10	EVAL L
10	L+1
10	NEXT 100
10	BRANCH ENTRY
1	WAIT
1	END

INITIALIZE COUNTER
CONTINUE FOR ALL CALLS
TEST VALUE OF COUNTER
INITIATE PARALLEL INSTANT
INCREMENT COUNTER
BRANCH
ENTRY
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 COMPLETE SUSPEND.						
1	1	0	1	0	0	0

PROCESS DESCRIPTION

```

PAGE 28
=====
TEST CALL BLOCK AND NOWAIT
=====
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====
1 START ALL NO INITIALIZE COUNTER
1 ASSIGN 1 L
1 ENTRY COMPARE L GT CONTINUE FOR ALL CALLS
11 NEXT 11 V COUNT1 WAIT TEST VALUE OF COUNTER
11 CALL PROCESS2 BLOCK 0 INITIATE PARALLEL INSTANT
10 EVAL L INCREMENT COUNTER
10 BRANCH NEXT 100 BRANCH
10 ENTRY ENTRY SYNCHRONIZE FOR ALL
1 CALL CALL
1 WAIT WAIT
1 END
1

```

```

PROCESS TOTAL 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. 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

```

```

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
# SMPLS MEAN..... MINIMUM.. MAXIMUM... STD DEV...
=====
ITEM 10 0. 0. 0. 0.
ITEM1 10 0. 0. 0. 0.
ITEM2 10 0. 0. 0. 0.
ITEM3 10 0. 0. 0. 0.
ITEM4 10 0. 0. 0. 0.

```

C-17

1 1 0 1 0 0

```

=====
ITEM      CREATED  RECEIVED SENT  DESTR'D
=====
AITEM1    10      0      10      0
AITEM2    10      0      10      0
AITEM3    10      0      10      0
=====

```

```

=====
PROCESS HOLDING TIME
# SMPLS MEAN..... MINIMUM.. MAXIMUM... STD DEV...
=====
AITEM1    10      0.      0.      0.
AITEM2    10      0.      0.      0.
AITEM3    10      0.      0.      0.
=====

```

```

=====
PROCESS DESCRIPTION
=====
CREATE, SEND, LOOP 3 ITEMS
=====

```

```

=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
1  START  ALL  NO
10 NEXT  ENTRY  AITEM1 AITEM2 AITEM3 ENTRY
10 CREATE SEND  PROCESS4 AITEM1 AITEM2 CREATE 3 ITEMS
10 SEND  AITEM3
10 LOOP  NEXT  V_COUNT1 LOOP V_COUNT1 TIMES - NEXT
1 END
=====

```

```

=====
PROCESS TOTAL
INIT48  SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
TOTAL    0      0.      0.      0.      0.
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 0 1 0
=====

```

```

=====
ITEM      CREATED  RECEIVED SENT  DESTR'D
=====
AITEM4    9      0      9      0
=====

```

```

=====
PROCESS HOLDING TIME
# SMPLS MEAN..... MINIMUM.. MAXIMUM... STD DEV...
=====

```


PAGE 31 AITEM4 9 0. 0. 0. 0.

PROCESS DESCRIPTION
=====

INIT48 CREATE, SEND, LOOP WITH DELAY

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
1	NEXT	START	ALL	NO		
10	ENTRY	CONSTANT 10				ENTRY ACTION
10	DELAY	SECONDS	RESUME			
10		CREATE	AITEM4			CREATE
9	SEND	PROCESS4	AITEM4			
9	LOOP	NEXT	V_COUNT1			LOOP V_COUNT1 TIMES - NEXT
9						
0						END

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
PLONG1	TOTAL	5	50.0000	10.0000	0.	10.0000	10.0000
	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.

PROCESS DESCRIPTION
=====

PLONG1

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
6	START	ALL	NO			
8	ALLOC	CPU1	5			PARTIAL
8	DELAY	PRIORITY	5			
8		CONSTANT 5				
8	DEALLOC	SECONDS	RESUME			
8	DELAY	CPU1	3			
8		CONSTANT 5				
8	DEALLOC	SECONDS	RESUME			
5		CPU1	2			
5						END

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM

```
=====
PLONG2      TOTAL      5      64.000      12.000      0.980      12.000      14.000
PROCESS WAIT      0      0.      0.      0.      0.      0.
RESOURCE WAIT     15     18.000      1.200      0.980      0.      2.000
=====
```

```
TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
6      0      6      1      9
=====
```

```
PROCESS      DESCRIPTION
=====
PLONG2
```

```
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
6 START      ALL      NO      5      PARTIAL
6 ALLOC      CPU2     5
6 $PRIORITY
15 DELAY      CONSTANT 5
15 DEALLOC   CPU2     3
6 DELAY      CONSTANT 5
6 DEALLOC   CPU2     2
5 END
=====
```

```
=====
PROCESS      TOTAL
SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
PLONG3      TOTAL      5      50.000      10.000      0.      10.000      10.000
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.
=====
6      0      6      5      1      0
=====
```

```
PROCESS      DESCRIPTION
=====
PLONG3
```

```
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
6 START      ALL      NO
6 ALLOC      CPU3     5      PARTIAL
=====
```

6
 6
 6
 6
 6
 5
 5
 END

PROCESS
 PRESETR3
 TOTAL
 PROCESS WAIT
 RESOURCE WAIT

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

PROCESS
 PRESETR3

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
1	1	START	ALL	NO		
1	1	ENTRY	CONSTANT	2		
1	1	DELAY	SECONDS	RESUME		
1	1	ENTRY	CPU3	-3		
4	4	RESET	CONSTANT	2		
4	4	DELAY	SECONDS	RESUME		
4	4	RESET	CPU3	3		
4	4	DELAY	CONSTANT	28		
4	4	SECONDS	RESUME			
3	3	LOOP	LOOP1	20		
0	0	END				

PROCESS
 PRESETR3
 TOTAL
 PROCESS WAIT
 RESOURCE WAIT

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

PROCESS DESCRIPTION
 =====
 PROCESS1 GIVEN-TIME, ACTION DELAY

COUNT ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
10	START	ALL	NO		
10	GIVEN	TIME			
10	DELAY	CONSTANT	TIME		ACTION
10		SECONDS	RESUME		
10	END				

TOTAL
 SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
 =====
 PROCESS2 11 110.000 10.000 0. 10.000 10.000
 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.
 =====
 11 0 11 11 0 0

PROCESS DESCRIPTION
 =====
 PROCESS2 ACTION DELAY (CONSTANT)

COUNT ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
11	START	ALL	NO		
11	DELAY	CONSTANT	10		
11		SECONDS	RESUME		
11	END				

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

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

ITEM CREATED RECEIVED SENT DESTR'D
 =====
 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
 # 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 # AVG DELAY MAX DELAY
 SENT TO -- NUMBER IN RECEIVE POOL -- TIME DUE TIME DUE
 PROCESS CURRENT AVERAGE MAXIMUM TO ITEM TO ITEM
 =====
 ITEM1 10 0 0.50 1.00 0. 0.
 ITEM2 10 0 0.40 1.00 1.00 1.00
 ITEM3 10 0 0.30 1.00 2.00 2.00
 ITEM4 10 0 0.20 1.00 3.00 3.00
 ITEM5 10 0 0.10 1.00 4.00 4.00
 ITEM6 10 0 0. 1.00 5.00 5.00

PROCESS DESCRIPTION
 =====
 PROCESS3 RECEIVE AND DESTROY ITEMS -- SERIAL # NO MATCH

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

PROCESS TOTAL
SAMPLES SUM MEAN STD DEV MINIMUM MAXIMUM
PROCESS4 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 COMPLETE COMPLETE SUSPEND
9 0 0 9 0 0

ITEM CREATED RECEIVED SENT DESTR'D
AITEM1 0 0 0 9
AITEM2 0 0 0 9
AITEM3 0 0 0 9
AITEM4 0 0 0 9

PROCESS HOLDING TIME
SMPLS MEAN MINIMUM MAXIMUM STD DEV
AITEM1 9 50.00 10.00 90.00 25.82
AITEM2 9 50.00 10.00 90.00 25.82
AITEM3 9 50.00 10.00 90.00 25.82
AITEM4 9 0 0 0 0

TOTAL # AVG DELAY MAX DELAY
SENT TO -- NUMBER IN RECEIVE POOL -- TIME DUE
PROCESS CURRENT AVERAGE MAXIMUM TO ITEM TO ITEM
AITEM1 19 1 5.50 10.00 0
AITEM2 19 1 5.50 10.00 0
AITEM3 19 1 5.50 10.00 0
AITEM4 18 0 0 1.00 0

PROCESS DESCRIPTION
RECEIVE AND DESTROY 4 ITEMS -- SERIAL # MATCH

COUNT ENTRY OPCODE PARM PARM PARM COMMENT
START ALL NO MATCH
RECEIVE AITEM1 AITEM2 AITEM3
DESTROY AITEM4 AITEM1 AITEM2 AITEM3 DESTROY 4 ITEMS
END

```

PROCESS          TOTAL
SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM... MAXIMUM...
=====
PSHRT1          14  92.000  8.671  1.801  5.000  10.000
PROCESS WAIT    0  0.  0.  0.  0.  0.
RESOURCE WAIT   16 30.000  1.875  1.900  0.  5.000
=====

```

```

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
16 16 0 14 2 0
=====

```

```

PROCESS          DESCRIPTION
=====
PSHRT1

```

```

COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
16 START      ALL      NO      PARTIAL
16 ALLOC      CPU1     5
16 DELAY      $PRIORITY
16 DELAY      SECONDS  1
16 DEALLOC    CPU1     1
15 DELAY      CONSTANT  1
15 DELAY      SECONDS  1
15 DEALLOC    CPU1     1
15 DELAY      CONSTANT  1
15 DELAY      SECONDS  1
15 DEALLOC    CPU1     1
15 DELAY      CONSTANT  1
15 DELAY      SECONDS  1
15 DEALLOC    CPU1     1
15 DELAY      CONSTANT  1
15 DELAY      SECONDS  1
15 DEALLOC    CPU1     1
15 DELAY      CONSTANT  1
15 DELAY      SECONDS  1
14 DEALLOC    CPU1     1
14 END
=====

```

```

PROCESS          TOTAL
SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM... MAXIMUM...
=====
PSHRT2          15  75.000  5.000  0.  5.000  5.000
PROCESS WAIT    0  0.  0.  0.  0.  0.
RESOURCE WAIT   16  0.  0.  0.  0.  0.
=====
TOTAL # # AUTO # CALL # OF # NOT # TIMES
=====

```

SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.

```

=====
16 0 15 1 0
=====

```

```

PROCESS DESCRIPTION
=====
PSHRT2
=====

```

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
16	START	ALL	NO			
16	ALLOC	CPU2	5	PARTIAL		
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
16	DEALLOC	CPU2	1			
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
16	DEALLOC	CPU2	1			
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
16	DEALLOC	CPU2	1			
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
15	DEALLOC	CPU2	1			
15	DELAY	CONSTANT	1			
15	SECONDS	RESUME				
15	DEALLOC	CPU2	1			
15	END					

```

TOTAL
PROCESS SAMPLES. SUM. MEAN. STD DEV. MINIMUM. MAXIMUM.
=====
PSHRT3
TOTAL 14 92.000 0.571 1.801 5.000 10.000
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 10 30.000 1.875 1.900 0. 5.000
=====

```

```

TOTAL # # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
16 16 0 14 2 3
=====

```

```

PROCESS DESCRIPTION
=====
PSHRT3
=====

```

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
16	START	ALL	NO			
16	ALLOC	CPU2	5	PARTIAL		
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
16	DEALLOC	CPU2	1			
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
16	DEALLOC	CPU2	1			
16	DELAY	CONSTANT	1			
16	SECONDS	RESUME				
16	DEALLOC	CPU2	1			
16	END					

START	ALL	NO	PARTIAL
ALLOC	CPU3	5	
	2		
DELAY	CONSTANT	1	
	SECONDS	RESUME	
DEALLOC	CPU3	1	
DELAY	CONSTANT	1	
	SECONDS	RESUME	
DEALLOC	CPU3	1	
DELAY	CONSTANT	1	
	SECONDS	RESUME	
DEALLOC	CPU3	1	
DELAY	CONSTANT	1	
	SECONDS	RESUME	
DEALLOC	CPU3	1	
DELAY	CONSTANT	1	
	SECONDS	RESUME	
DEALLOC	CPU3	1	
END			

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

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

PROCESS	DESCRIPTION
TRACE	

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
0		START	ALL	NO		
0		COMPARE	C_TRACE		EQ	
0			0		END	
0		TRACE	ON			
0		TRACE	ON			
0	END	ENTRY				
0		END				

APPENDIX C

Results Verification for

TESTDBB.DBF

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TESTDBB

TEST KEYWORDS, PARAMETER PASSING, AND READ/WRITE.

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SIMULATION TIME = 100.00000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES...

VARIABLE	TOTAL SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
V_CLOCK1	2	0.	0.	0.	0.	0.
V_CLOCK2	3	0.	0.	0.	0.	0.

NON-NUMERIC VARIABLES...

VARIABLE	CURRENT TYPE	CURRENT VALUE
V_CHNL	RESOURCE	CHNL
V_CNODE	RESOURCE	A
V_NXTND	RESOURCE	B

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SIMULATION TIME = 100.00000 SECONDS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
A						
# IDLE		1.000	0.900	0.300	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	3					
OUT OF BUSY	3	0.	0.100	0.300	0.	1.000
# BUSY			3.333	4.714	0.	10.000
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
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

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

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WAIT TIME 0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV....	MINIMUM...	MAXIMUM...
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0	0.	0.	0.	0.	0.
# BUSY			0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0	0.	0.	0.	0.	0.
# WAITING			0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV....	MINIMUM...	MAXIMUM...
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0	0.	0.	0.	0.	0.
# BUSY			0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.

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

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CHNL						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	1					
OUT OF BUSY	1					
# BUSY		0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	1					
OUT OF WAIT	1					
# WAITING		0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

SIMULATION TIME = 100.00000 SECONDS

ACTION REPORT

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

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

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

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

SIMULATION TIME = 100.00000 SECONDS

PROCESS REPORT

```

=====
PROCESS          TOTAL          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 SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
1          1          0          1          0          0
=====

```

```

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

```

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
1	START	A	NO			
1	ALLOC	\$CNODE	1	ALL		TEST \$CNODE IN ALLOC CONTX
1	ADelay	\$PRIORITY				
1	ADelay	CONSTANT	\$CLOCK			TEST \$CLOCK IN ACTION MEAN
1	ADelay	SECONDS	RESUME			
1	ADelay	CONSTANT	0			
1	ASSIGN	SECONDS	RESUME			TEST ASSIGNMENT OF \$CNODE
1	ASSIGN	\$CNODE				
1	ASSIGN	L CNODE				TEST ASSIGNMENT \$CNODE
1	ASSIGN	\$CNODE				TEST READING OF \$CNODE
1	READ	FILE1	EOF			TEST WRITING OF \$CNODE
1	WRITE	\$CNODE				TEST PROCESS TO LOCAL
1	ASSIGN	\$CNODE				TEST \$NODE EVALUATION
1	ASSIGN	NEXT				TEST \$NODE GLOBAL TO LOCAL
1	ASSIGN	\$NODE	NEXT			TEST \$NXTNODE
1	ASSIGN	\$NODE	BPROC			TEST ASSIGNMENT & COMPARE
1	ASSIGN	\$NODE	EPROC			
1	ASSIGN	\$NODE				
1	COMPARE	LB1				
1		LB2				

0	BRANCH	N1	100		
1	ENTRY				
1	ASSIGN	\$NXTNODE LB1			TEST \$NXTNODE
1		LB3			
1	ASSIGN	\$NXTNODE LB2			
1		V NEXT			
1	COMPARE	LB3		EQ	TEST \$NXTNODE TO LOCAL
1		V NEXT		N2	
0	BRANCH	N2	100		
1	ENTRY				
1	ASSIGN	\$LINK B			TEST \$LINK TO LOCAL RES.
1		L1 CHNL			
1	ASSIGN	\$LINK LB3			TEST \$LINK TO LOCAL
1		L2 CHNL			
1	ASSIGN	\$LINK V_NEXT			TEST \$LINK GLOBAL
1		V CHNL			
1	COMPARE	\$CNODE		EQ	TEST COMPARE CONTEXT \$CNODE
1		\$CNODE A1	100	A1	
0	BRANCH	A1			
1	ENTRY				
1	COMPARE	L_CNODE		EQ	TEST CONTEXT \$CNODE TO LOC
1		\$CNODE A2	100	A2	
0	BRANCH	A2			
1	ENTRY				
1	COMPARE	\$CNODE		EQ	TEST CONTEXT \$CNODE-GLOBAL
1		V_CNODE A3	100	A3	
0	BRANCH	A3			
1	ENTRY				
1	COMPARE	L_NXTND		EQ	TEST \$NXTNODE GLOBAL-LOCAL
1		V_NXTND A4	100	A4	
0	BRANCH	A4			
1	ENTRY				
1	COMPARE	L1 CHNL		EQ	TEST \$LINK COMPARE
1		L2 CHNL		A5	
1		A5	100		
0	BRANCH				
1	ENTRY	V CHNL		EQ	TEST ASSIGN \$LINK
1	COMPARE	L1 CHNL		A6	
1		A6	100		
0	BRANCH				
1	ENTRY				
1	TEST	L2 CHNL A7			AVAILABILITY OF \$LINK
1		A7	100		
1	ENTRY				
1	ALLOC	L2 CHNL 1		ALL	SWITCH BUSY FLAG ON CHNL
1		\$PRIORITY			
1	READ	FILE1 EOF			TEST READING ALL ATTRIBUTE
1		L2 CHNL []			
1	WRITE	FILE2			TEST WRITING SPEED ATTR OF
1		L2 CHNL SPEED			

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1	READ	FILE1	EOF	TEST READING RESOURCE NAME
1	WRITE	RESOURCE		TEST WRITING LOCAL
1	TEST	FILE2		TEST SHOULD FAIL
1	BRANCH	RESOURCE	A8	
1	ENTRY	L2 CHNL	100	
1	DEALLOC	A8		
1	TRANSFER	\$CNODE	1	RELEASE CURRENT NODE
1	SECONDS	CONSTANT	\$CLOCK	TRANSFER DATA OVER CHANNEL
1	DEALLOC	RESUME		
1	WRITE	L2 CHNL	1	RELEASE CURRENT CHANNEL
1	WRITE	FILE2		WRITE \$PRIORITY
1	WRITE	\$PRIORITY		WRITE \$CLOCK
1	WRITE	FILE2		WRITE \$TASK
1	WRITE	FILE2		
1	CALL	\$TASK		TEST PARAMETER BINDING
1	GIVEN	BPROC	NOWAIT	
1	ENTRY	\$CLOCK	\$CNODE	TEST BINDING OF \$TASK
1	SUSPEND			
1	END			

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
BPROC	1	10.000	10.000	0.	10.000	10.000
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	2	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	COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
BPROC	1	START	B	NO			
	1	GIVEN	LCLOCK	LNODE	LTASK		
	1	ASSIGN	\$NODE	BPROC			LET CURRENT NODE REGISTER
	1	ALLOC	\$CNODE	1	ALL		MAKE B BUSY
	1		\$PRIORITY				
	1	BDelay	CONSTANT	\$CLOCK			

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PAGE	TRACE	COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
18								
		1	START	ALL				
		1	TRACE	ON				
		1	TRACE	ON				
		1	END					

APPENDIX C

Results Verification for

TESTDBC.DBF

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TESTOBC

TEST BATCH MODE PROCESSING

88

1400.0000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES...

TOTAL		-----VALUE-----			
VARIABLE	SAMPLES	CURRENT...	MEAN.....	STD DEV...	MINIMUM... MAXIMUM...
GAMMA1	1	300.000	300.000	0.	300.000 300.000
GAMMA2	1	0.001	0.001	0.	0.001 0.001

NON-NUMERIC VARIABLES

VARIABLE	CURRENT TYPE	CURRENT VALUE
...	...	...

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SIMULATION TIME = 1400.00000 SECONDS

ITEM REPORT

ITEM	NUMBER	NUMBER	MINIMUM...	MAXIMUM...	AVERAGE...	STD DEV...
NAME	CREATED	DESTR'D				
MSG	400	400	0.09	26.16	4.99	7.18

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SIMULATION TIME = 1400.00000 SECONDS

QUEUE REPORT

QUEUE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
=====	=====	=====	=====	=====	=====	=====
BUFFER	400					
REMOVED FROM	400					
# IN QUEUE		0.	1.343	4.369	0.	24.000
TIME IN QUEUE			4.699	7.186	+3.367E-04	26.097
TASKS BLOCKED	0					
TASKS RESUMED	0					
# BEING BLOCKED		0.	0.	0.	0.	0.
TIME BLOCKED			0.	0.	0.	0.

SIMULATION TIME = 1400.00000 SECONDS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
SEMA						
# IDLE		1.000	0.958	0.201	0.	1.000
REQUEST TIME			0.022	0.057	0.	0.394
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	400					
OUT OF BUSY	400	0.	0.042	0.201	0.	1.000
# BUSY			0.147	0.089	+1.373E-04	0.300
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	400					
OUT OF WAIT	400	0.	0.006	0.084	0.	2.000
# WAITING			0.022	0.057	0.	0.394
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
STATION1						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0	0.	0.	0.	0.	0.
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0	0.	0.	0.	0.	0.
# WAITING						

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WAIT TIME

0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
STATION2						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0					
# BUSY		0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0					
# WAITING		0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

SIMULATION TIME = 1400.00000 SECONDS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
READ MSG	400	0.147	0.089	+1.670E-04	0.300	4.212
USEFUL TIME	400	0.	0.	0.	0.	
DELAY TIME	400	0.	0.	0.	0.	
WASTED TIME	0	0.	0.	0.	0.	

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
SENDING	400	0.147	0.089	+1.373E-04	0.300	4.212
USEFUL TIME	400	0.	0.	0.	0.	
DELAY TIME	400	0.	0.	0.	0.	
WASTED TIME	0	0.	0.	0.	0.	

SIMULATION TIME = 1400.00000 SECONDS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
RECEIVE	4599	58.988	0.013	0.049	0.	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 0 0 0 0 0 0

ITEM CREATED RECEIVED SENT DESTROY

MSG 0 0 0 400

PROCESS HOLDING TIME
SMPLS MEAN... MINIMUM... MAXIMUM... STD DEV...

MSG 400 0.15 +1.528E-04 0.30 0.09

PROCESS DESCRIPTION

RECEIVE
=====

COUNT ENTRY OPCODE PARM PARM PARM PARM COMMENT

4599 START STATION2 NO

4599 TEST SENA ABORT

4416 REMOVE FIRST MSG

4416 COMPARE MSG

4416 ASSIGN MSG LENGTH

400 ALPHA

400 EVAL MU

400 ALPHA+GAMMA2

400 READ_MSG CONSTANT MU

400 SECONDS RESUME

400 DESTROY MSG

4599 ABORT ENTRY

4599 END

TOTAL

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PROCESS
TRANSMIT

	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TOTAL	400	67.687	0.169	0.107	+1.373E-04	0.671
PROCESS WAIT	0	0	0	0	0	0
RESOURCE WAIT	400	8.718	0.022	0.057	0	0.394

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

ITEM CREATED RECEIVED SENT DESTROY
=====

PROCESS HOLDING TIME
ITEM # SMPLE MEAN... MINIMUM... MAXIMUM... STD DEV...
MSG 400 0.15 +1.373E-04 0.30 0.09

PROCESS DESCRIPTION
TRANSMITTING MESSAGES TO RECEIVER

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
400	START	SEMA	STATION1	NO		
400	ALLOC			1	ALL	RESOURCE FOR SENDING MSG
400	CREATE	MSG				INTRODUCE MSG INTO SYSTEM
400	EVAL	ALPHA				GENERATE RANDOM NUMBER
400	EVAL	RANDOM				AVERAGE TIME ALPHA
400	EVAL	ALPHA				SET MESSAGE LENGTH
400	ASSIGN	ALPHA				CALCULATE TRANSMIT TIME
400	EVAL	MSG		LENGTH		
400	EVAL	ALPHA				TIME CONSUMED TRANSMITTING
400	SENDING	CONSTANT	MU			
400	SECONDS	RESUME				
400	FILE	MSG		LAST	1	STORE MSG ON BUFFER
400	DEALLOC	SEMA				RELEASE RESOURCE SEMA
400	END					

APPENDIX C

Results Verification for
TESTDBD.DBF

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04/21/1987 09:11:10

TESTDBD

TEST VARIABLE TIME UNITS, MESSAGE ROUTINE, AND RESOURCE LOGIC

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SIMULATION TIME = 3000.00000 SECONDS

CONSTANT REPORT

CURRENT
CONSTANT VALUE ..=
===== V_TRACE 0.

SIMULATION TIME = 3600.00000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES...

VARIABLE	TOTAL SAMPLES	VALUE				
		CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
ABDRATE	1	1.000	1.000	0.	1.000	1.000
ABRRATE	1	36000.000	36000.000	0.	36000.000	36000.000
HQRRATE	1	72000.000	72000.000	0.	72000.000	72000.000
TIME1	1	30.000	30.000	0.	30.000	30.000
VRATE	1	1.628	1.628	0.	1.628	1.628

NON-NUMERIC VARIABLES...

VARIABLE	CURRENT	VALUE
TYPE		

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SIMULATION TIME = 3600.00000 SECONDS

ITEM REPORT

ITEM NAME	NUMBER CREATED	NUMBER DESTR'D	TIME IN SYSTEM		
			MINIMUM...	AVERAGE...	STD DEV...
=====	=====	=====	=====	=====	=====
MSG	528	522	22.61	194.86	71.89
					38.97

3600.00000 SECONDS

REPORT

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
AB1						
# IDLE		0.	0.513	0.500	0.	1.000
REQUEST TIME			4.883	5.861	0.	22.000
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	418					
OUT OF BUSY	415	1.000	0.487	0.500	0.	1.000
# BUSY			4.222	2.309	0.	6.000
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	418					
OUT OF WAIT	416	2.000	0.541	0.973	0.	5.000
# WAITING			4.883	5.861	0.	22.000
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NODEPROC

PROCESSES CURRENTLY
WAITING: NODEPROC NODEPROC

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
AB2						
# IDLE		0.	0.513	0.500	0.	1.000
REQUEST TIME			4.319	5.315	0.	22.000
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	418					
OUT OF BUSY	415	1.000	0.487	0.500	0.	1.000
# BUSY			4.222	2.309	0.	6.000
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	418					
OUT OF WAIT	416	2.000	0.499	0.911	0.	5.000
# WAITING						

PAGE 22 WAIT TIME 4.319 5.315 0. 22.000

CURRENTLY ALLOCATED
TO PROCESSES: NODEPROC

PROCESSES CURRENTLY
WAITING: NODEPROC NODEPROC

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH1_A						
# IDLE		1.000	0.935	0.247	0.	1.000
REQUEST TIME						
HOLD TIME	0					
INTO BUSY	237					
OUT OF BUSY	237					
# BUSY		0.	0.065	0.247	0.	1.000
BUSY TIME			0.994	0.389	0.325	1.221
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	237					
OUT OF WAIT	237					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH1_B						
# IDLE		1.000	0.986	0.180	0.	1.000
REQUEST TIME						
HOLD TIME	0					
INTO BUSY	119					
OUT OF BUSY	119					
# BUSY		0.	0.034	0.180	0.	1.000
BUSY TIME			1.018	0.203	0.814	1.221
# INACTIVE		0.	0.	0.	0.	0.

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INTO WAIT 119
OUT OF WAIT 119
WAITING
WAIT TIME

0. 0. 0. 1.000
0. 0. 0. 0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE
PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH2_A						
# IDLE		1.000	0.935	0.247	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY 237			0.065	0.247	0.	1.000
OUT OF BUSY 237		0.	0.994	0.389	0.325	1.221
# BUSY						
BUSY TIME		0.	0.	0.	0.	0.
# INACTIVE						
INTO WAIT 237			0.	0.	0.	1.000
OUT OF WAIT 237		0.	0.	0.	0.	0.
# WAITING						
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONE
PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH2_B						
# IDLE		1.000	0.968	0.180	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY 119			0.034	0.180	0.	1.000
OUT OF BUSY 119		0.	1.016	0.203	0.814	1.221
# BUSY						
BUSY TIME						

```

# INACTIVE          0.          0.          0.          0.
  INTO WAIT         119
  OUT OF WAIT       119          0.          0.          0.          1.000
  # WAITING
  WAIT TIME

```

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV....	MINIMUM...	MAXIMUM...
CH3_A						
# IDLE		1.000	0.990	0.100	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	118					
OUT OF BUSY	118	0.	0.010	0.100	0.	1.000
# BUSY			0.305	+1.105E-05	0.305	0.305
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	118					
OUT OF WAIT	118	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...
CH3_B						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	0					

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HOLD TIME	0	0.	0.	0.
INTO BUSY	120			
OUT OF BUSY	120			
# BUSY		0.	0.007	0.000
BUSY TIME			0.203 + 3.882E-05	0.203
# INACTIVE		0.	0.	0.
INTO WAIT	120			
OUT OF WAIT	120			
# WAITING		0.	0.	1.000
WAIT TIME		0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH5_A						
# IDLE		1.000	0.999	0.033	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.		
INTO BUSY	48					
OUT OF BUSY	48					
# BUSY		0.	0.001	0.033	0.	1.000
BUSY TIME			0.001 + 0.855E-04	0.001	0.001	0.002
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	48					
OUT OF WAIT	48					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH5_A						

CH5_8

REQUEST TIME	# IDLE	1.000	0.997	0.052	0.	0.	1.000
HOLD TIME							
INTO BUSY	48						
OUT OF BUSY	48						
# BUSY		0.	0.003	0.052	0.	0.203	1.000
BUSY TIME			0.203 + 0.911E-04				0.204
# INACTIVE		0.	0.	0.	0.		0.
INTO WAIT	48						
OUT OF WAIT	48						
# WAITING		0.	0.	0.	0.	0.	1.000
WAIT TIME							0.

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
=====	=====	=====	=====	=====	=====	=====
CH6_A						
REQUEST TIME	1.000	0.989	0.104	0.	0.	1.000
HOLD TIME	0	0.	0.	0.	0.	0.
INTO BUSY	48					
OUT OF BUSY	48					
# BUSY	0.	0.011	0.104	0.	0.814	1.000
BUSY TIME		0.814 + 1.003E-04				0.814
# INACTIVE	0.	0.	0.	0.	0.	0.
INTO WAIT	48					
OUT OF WAIT	48					
# WAITING	0.	0.	0.	0.	0.	1.000
WAIT TIME						0.

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH0_B						

# IDLE	1.000	0.996	0.066	0.	1.000
REQUEST TIME		0.	0.	0.	0.
HOLD TIME	0	0.	0.	0.	0.

INTO BUSY	48				
OUT OF BUSY	48				
# BUSY	0.	0.004	0.066	0.	1.000
BUSY TIME		0.326	+0.848E-04	0.325	0.326

# INACTIVE	0.	0.	0.	0.	0.

INTO WAIT	48				
OUT OF WAIT	48				
# WAITING	0.	0.	0.	0.	1.000
WAIT TIME		0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH7_A						

# IDLE	1.000	0.996	0.066	0.	1.000
REQUEST TIME		0.	0.	0.	0.
HOLD TIME	0	0.	0.	0.	0.

INTO BUSY	48				
OUT OF BUSY	48				
# BUSY	0.	0.004	0.066	0.	1.000
BUSY TIME		0.326	+0.847E-04	0.325	0.326

# INACTIVE	0.	0.	0.	0.	0.

INTO WAIT	48				
OUT OF WAIT	48				
# WAITING	0.	0.	0.	0.	1.000
WAIT TIME		0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH7_B						
# IDLE		1.000	0.949	0.220	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	168					
OUT OF BUSY	168	0.	0.051	0.220	0.	1.000
# BUSY			1.103	0.184	0.814	1.221
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	168					
OUT OF WAIT	168	0.	0.	0.	0.	1.000
# WAITING			0.	0.	0.	0.
WAIT TIME						

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH8_A						
# IDLE		1.000	0.962	0.191	0.	1.000
REQUEST TIME			0.769	1.047	0.	4.582
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	168					
OUT OF BUSY	168	0.	0.038	0.191	0.	1.000
# BUSY			0.814	0.614E-04	0.814	0.814
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	168					
OUT OF WAIT	168	0.	0.038	0.312	0.	0.000
# WAITING			0.769	1.047	0.	4.582
WAIT TIME						

PAGE 30
 CURRENTLY ALLOCATED
 TO PROCESSES: NONE
 PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
CH8_B						
# IDLE		1.000	0.945	0.228	0.	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	286					
OUT OF BUSY	286	0.	0.055	0.228	0.	1.000
# BUSY			0.695	0.441	0.325	1.221
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	286					
OUT OF WAIT	286	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...
CH9_A						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0	0.	0.	0.	0.	0.
# BUSY			0.	0.	0.	0.
BUSY TIME						
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0					

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 # WAITING
 WAIT TIME

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CH9_B						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0					
# BUSY		0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0					
# WAITING		0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CHQ						
# IDLE		1.000	0.726	0.446	0.	1.000
REQUEST TIME			0.929	1.924	0.	12.670
HOLD TIME			0.	0.	0.	0.
INTO BUSY	827					
OUT OF BUSY	827					
# BUSY		0.	0.274	0.446	0.	1.000
BUSY TIME			1.192	2.068	0.	0.000
# INACTIVE		0.	0.	0.	0.	0.

INTO WAIT 827
 OUT OF WAIT 827
 # WAITING 0.
 WAIT TIME 0.213 0.653 0. 7.000
 0.929 1.924 0. 12.570

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
OK1						
# IDLE		1.000	0.998	0.045	0.	1.000
REQUEST TIME			0.	0.	0.	0.
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	168					
OUT OF BUSY	168					
# BUSY		0.	0.002	0.045	0.	1.000
BUSY TIME			0.044	0.019	0.004	0.086
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	168					
OUT OF WAIT	168					
# WAITING		0.	0.	0.	0.	1.000
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
 TO PROCESSES: NONE

PROCESSES CURRENTLY
 WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT...	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
HQ						
# IDLE		1.000	0.728	0.445	0.	1.000
REQUEST TIME			1.074	2.373	0.	16.611
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	410					
OUT OF BUSY	410					
# BUSY		0.	0.272	0.445	0.	1.000

BUSY TIME

INACTIVE

INTO WAIT

WAITING

WAIT TIME

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
L3						

IDLE

REQUEST TIME

HOLD TIME

INTO BUSY

OUT OF BUSY

BUSY

BUSY TIME

INACTIVE

INTO WAIT

OUT OF WAIT

WAITING

WAIT TIME

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
SW1						

IDLE

REQUEST TIME

HOLD TIME

INTO BUSY

OUT OF BUSY

BUSY

BUSY TIME

INACTIVE

INTO WAIT

OUT OF WAIT

WAITING

WAIT TIME

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

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INTO BUSY 594
OUT OF BUSY 594

BUSY 0. 0.777 0.416 0. 1.000
BUSY TIME 4.707 1.746 1.000 6.000

INACTIVE 0. 0. 0. 0.

INTO WAIT 594
OUT OF WAIT 594
WAITING 0. 5.007 5.432 0. 22.000
WAIT TIME 30.347 21.254 0. 84.387

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE TOTAL
NUMBER
=====

IDLE 1.000 0.729 0.445 0. 1.000
REQUEST TIME 0.374 1.175 0. 7.903
HOLD TIME 0. 0. 0. 0.

INTO BUSY 214
OUT OF BUSY 214
BUSY 0. 0.271 0.445 0. 1.000
BUSY TIME 4.564 1.783 1.000 6.000

INACTIVE 0. 0. 0. 0.

INTO WAIT 214
OUT OF WAIT 214
WAITING 0. 0.022 0.160 0. 2.000
WAIT TIME 0.374 1.175 0. 7.903

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

TOTAL
NUMBER
=====

1.000 0.542 0.498 0. 1.000

CURRENT... MEAN... STD DEV... MINIMUM... MAXIMUM...

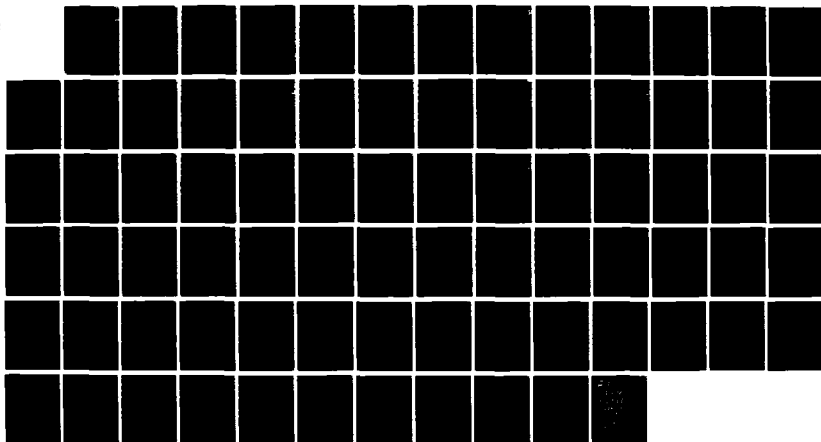
AD-A189 146

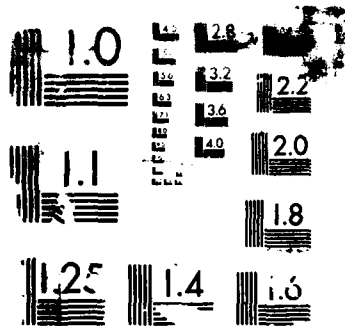
AUTOMATED INTERACTIVE SIMULATION MODEL (AISIM) VAX
VERSION 50 ACCEPTANCE. (U) HUGHES AIRCRAFT CO FULLERTON
CA GROUND SYSTEMS GROUP Y ALLERTON ET AL. 29 APR 87
1854474-2 ESD-TR-87-226 F19628-86-C-0070 F/G 12/5

4/4

UNCLASSIFIED

NL





Copy Resolution Test Chart

PAGE 35						
REQUEST TIME						
HOLD TIME	0					24.435
INTO BUSY	454					0.
OUT OF BUSY	454					0.
# BUSY						0.
BUSY TIME	0.	0.458	0.498	0.	1.000	0.000
		3.032	1.742		1.000	0.
# INACTIVE	0.	0.	0.		0.	0.
INTO WAIT	454					7.000
OUT OF WAIT	454					24.435
# WAITING	0.	0.487	1.150	0.	0.	0.
WAIT TIME		3.058	5.003		0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

SIMULATION TIME = 3000.00000 SECONDS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
=====						
FORMAT						
USEFUL TIME	108	0.002	+4.240E-05	0.002	0.002	0.009
DELAY TIME	108	1.524	2.289	0.	9.064	
WASTED TIME	0	0.	0.	0.	0.	
=====						
LATENCY						
=====						
ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
=====						
USEFUL TIME	108	0.015	0.009	+0.910E-04	0.030	0.068
DELAY TIME	108	0.	0.	0.	0.	
WASTED TIME	0	0.	0.	0.	0.	
=====						
ROUTE OH						
=====						
ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
=====						
USEFUL TIME	2570	4.338	1.876	1.000	6.000	309.667
DELAY TIME	2570	0.	0.	0.	0.	
WASTED TIME	0	0.	0.	0.	0.	
=====						
SEEK						
=====						
ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
=====						
USEFUL TIME	108	0.029	0.017	+2.441E-04	0.080	0.137
DELAY TIME	108	0.	0.	0.	0.	
WASTED TIME	0	0.	0.	0.	0.	
=====						
UPDATE						
=====						
ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
=====						
USEFUL TIME	354	0.008	0.005	0.	0.011	0.074
DELAY TIME	354	1.775	3.093	0.	15.011	
WASTED TIME	0	0.	0.	0.	0.	
=====						
XFER						
=====						
ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
=====						

PAGE 37		100	+2.105E-05	+3.808E-05	0.	+2.441E-04	+0.983E-04
USEFUL TIME	100	0.	0.	0.	0.	0.	0.
DELAY TIME	100	0.	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.	0.

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM..		MAXIMUM...		% TIME OF TOTAL
				=====	=====	=====	=====	
XFER OH	2048	0.694	0.430	0.001	1.221	39.490		
USEFUL TIME	2048	0.	0.	0.	0.			
DELAY TIME	2048	0.	0.	0.	0.			
WASTED TIME	0	0.	0.	0.	0.			

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SIMULATION TIME = 3600.00000 SECONDS

PROCESS REPORT

```

PROCESS          TOTAL
SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
ABUDDATE        118      0.010 +1.561E-04 +0.781E-04      0.      +2.441E-04
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.

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 +1.561E-04      0.      +2.441E-04 +0.781E-04
  
```

PROCESS DESCRIPTION
=====

ABUDDATE UPDATE DATA FROM AIRBASE

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
118	START				NO	
118	GIVEN					MSG
118	RETURN					MSG
118	UPDATE				CONSTANT 0.1	TIME CONSUMED IN UPDATING
118	WSECONDS				RESUME	
118	END					

```

PROCESS          TOTAL
SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
AB_DATA        120      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

PROCESS	TOTAL SAMPLES.	SUM.....	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
AB_REQ	120	15050.965	125.425	36.615	22.000	194.865
PROCESS WAIT	120	15050.965	125.425	36.615	22.000	194.865
RESOURCE WAIT	0	0.	0.	0.	0.	0.

TOTAL # SCHEDULE	# AUTO SCHEDULE	# CALL SCHEDULE	# OF COMPLETE	# NOT COMPLETE	# TIMES SUSPEND.
120	0	0	120	0	0

PROCESS	DESCRIPTION
1.1	1.1.1
1.2	1.2.1
1.3	1.3.1
1.4	1.4.1
1.5	1.5.1
1.6	1.6.1
1.7	1.7.1
1.8	1.8.1
1.9	1.9.1
1.10	1.10.1
1.11	1.11.1
1.12	1.12.1
1.13	1.13.1
1.14	1.14.1
1.15	1.15.1
1.16	1.16.1
1.17	1.17.1
1.18	1.18.1
1.19	1.19.1
1.20	1.20.1
1.21	1.21.1
1.22	1.22.1
1.23	1.23.1
1.24	1.24.1
1.25	1.25.1
1.26	1.26.1
1.27	1.27.1
1.28	1.28.1
1.29	1.29.1
1.30	1.30.1
1.31	1.31.1
1.32	1.32.1
1.33	1.33.1
1.34	1.34.1
1.35	1.35.1
1.36	1.36.1
1.37	1.37.1
1.38	1.38.1
1.39	1.39.1
1.40	1.40.1
1.41	1.41.1
1.42	1.42.1
1.43	1.43.1
1.44	1.44.1
1.45	1.45.1
1.46	1.46.1
1.47	1.47.1
1.48	1.48.1
1.49	1.49.1
1.50	1.50.1
1.51	1.51.1
1.52	1.52.1
1.53	1.53.1
1.54	1.54.1
1.55	1.55.1
1.56	1.56.1
1.57	1.57.1
1.58	1.58.1
1.59	1.59.1
1.60	1.60.1
1.61	1.61.1
1.62	1.62.1
1.63	1.63.1
1.64	1.64.1
1.65	1.65.1
1.66	1.66.1
1.67	1.67.1
1.68	1.68.1
1.69	1.69.1
1.70	1.70.1
1.71	1.71.1
1.72	1.72.1
1.73	1.73.1
1.74	1.74.1
1.75	1.75.1
1.76	1.76.1
1.77	1.77.1
1.78	1.78.1
1.79	1.79.1
1.80	1.80.1
1.81	1.81.1
1.82	1.82.1
1.83	1.83.1
1.84	1.84.1
1.85	1.85.1
1.86	1.86.1
1.87	1.87.1
1.88	1.88.1
1.89	1.89.1
1.90	1.90.1
1.91	1.91.1
1.92	1.92.1
1.93	1.93.1
1.94	1.94.1
1.95	1.95.1
1.96	1.96.1
1.97	1.97.1
1.98	1.98.1
1.99	1.99.1
1.100	1.100.1

AISBASE REQUEST FOR PLANS REPORT FROM CHQ

COUNT ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
120	START			NO	
120	GIVEN	MSG			
120	RETURN	MSG			
120	CALL	MRS	WAIT	5	PROCESS REQUEST TO CHQ
120	GIVEN	PLANS	CHQ	5	\$REQRESP
120		200			MSG
120	END				

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
CHANPROC							
TOTAL	2048	79459.036	38.798	33.438	4.814	183.451	
PROCESS WAIT	2048	77988.231	38.041	33.523	4.000	183.126	
RESOURCE WAIT	2048	129.174	0.063	0.367	0.	4.682	

TOTAL # AUTO CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
2048 0 2048 2048 0 0

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

ITEM	PROCESS	HOLDING	TIME	# SMPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
MSG	2048	0.76	0.08	5.40	0.58			

PROCESS DESCRIPTION
FULL AND HALF DUPLEX CHANNEL LOGIC

COUNT ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
2048	START	ALL		NO	
2048	GIVEN	MSG			
2048	ASSIGN	3CNODE	CNODE		SET INTERNAL NODE CURRENT
2048	ASSIGN	3CNODE	TNODE		GET DESTINATION NODE
2048	ASSIGN	TO NODE			
2048	ASSIGN	SNXTNODE	TO_NODE		SET NEXT NODE TO DESTN
2048	ASSIGN	NXT NODE			
2048	ASSIGN	3CHANNEL	TO_NODE		GET CHANNEL TO NEXT NODE

```

2048 ALLOC CHANNEL 1 ALL
2048 $PRIORITY CHANNEL RATE
2048 ASSIGN MSG LENGTH
2048 ASSIGN MSG LENGTH
2048 EVAL VM OVHD
2048 VSPEED*VLENGTH
2048 XFER_OH CONSTANT VM OVHD
2048 ASSIGN MSG_NXT_NODE CNODE
2048 ASSIGN MSG_NXT_NODE
2048 DEALLOC CHANNEL 1
2048 CALL NODEPROC WAIT 0
2048 GIVEN MSG
2048 END

```

```

PROCESS CHQ_DATA
=====
TOTAL SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
PROCESS WAIT 118 335.577 2.844 3.280 0.011 12.581
RESOURCE WAIT 103 0. 0. 0. 0. 0.

```

```

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE COMPLETE SUSPEND.
=====
118 0 118 118 0 103

```

```

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

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN..... MINIMUM.. MAXIMUM... STD DEV...
=====
MSG 118 2.84 0.01 12.58 3.26

```

```

PROCESS DESCRIPTION
=====
CHQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES

```

```

COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====
118 START NO

```

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```

118 MSG
118 RETURN MSG
118 ASSIGN MSG
118 V LENGTH
118 V TIME
118 .016*V LENGTH
205 CONSTANT V TIME
205 WSECONDS RESUME
118 END

```

```

PROCESS TOTAL
SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
DESTPROC 690 10141.055 14.697 25.949 0. 108.088
PROCESS WAIT 690 9725.128 14.094 25.102 0. 108.124
RESOURCE WAIT 522 415.927 0.797 2.890 0. 22.000

```

```

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
690 0 690 0 0 0 0

```

```

ITEM CREATED RECEIVED SENT DESTR'D
=====
MSG 0 0 0 522

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN..... MINIMUM... MAXIMUM... STD DEV...
=====
MSG 1212 0.34 0. 22.00 1.94

```

```

PROCESS DESCRIPTION
=====
DESTPROC PROCESSING AT DESTINATION OF MESSAGE
=====
COUNT ENTRY OPCODE PARM PARM PARM PARM COMMENT
=====
690 START ALL NO
690 GIVEN MSG CNODE CNODE CURRENT NODE
690 ASSIGN MSG CNODE CNODE IF RESPONSE, DESTROY
690 COMPARE MSG CNODE CNODE TYPE EQ EQ IF RESPONSE, DESTROY
690 $RESP CNODE 1 ALL DESTROY
690 CNODE 1 ALL ALLOC ALLOC ALLOCATE CURRENT NODE
522 $PRIORITY MSG RPROC EXECUTE THE CALLED PROCESS
622 ASSIGN MSG RPROC SET PRIORITY FOR REQ PROC
622 ASSIGN MSG RPROC PRI

```

522	CALL	PRIORITY	WAIT	PRIORITY	WAIT UNTIL COMPLETE
522	GIVEN	MSG			
522	RETURN	MSG			
522	DEALLOC	C NODE	1		DEALLOCATE CURRENT NODE
522	COMPARE	MSG	TYPE	EQ	NO RESPONSE REQ -> DESTROY
522	ASSIGN	\$REQNORE		DESTROY	
100		\$RESP			CHANGE MSG RESPONSE TYPE
100		MSG	TYPE		
100	ASSIGN	MSG	FNODE		SWITCH FROM AND TO NODES
100		MSG	TNODE		
100	ASSIGN	MSG	CNODE		CURRENT NODE IS FROM NODE
100		MSG	FNODE		
100	CALL	CHANPROC	WAIT	0	RETURN MESSAGE TO ORIGIN
100	GIVEN	MSG			
100	BRANCH	END	100		
522	DESTROY	ENTRY			TERMINATE MESSAGE AT DEST
522	DESTROY	MSG			TERMINATE MSG
600	END				
600	END				

PROCESS	TOTAL	SAMPLES.	SUM.	MEAN.	STD DEV.	MINIMUM.	MAXIMUM.
DISK_OP							
TOTAL	100		7.403	0.044	0.019	0.004	0.086
PROCESS WAIT	0		0.	0.	0.	0.	0.
RESOURCE WAIT	100		0.	0.	0.	0.	0.

TOTAL	#	AUTO	#	CALL	#	OF	#	NOT	#	TIMES
SCHEDULE	SCHEDULE	SCHEDULE	COMPLETE	COMPLETE	COMPLETE	SUSPEND.				
100	0	100	100	100	0	0				

PROCESS	DESCRIPTION
DISK_OP	OPERATION OF DISK

COUNT	ENTRY	OPCODE	PARAM	PARAM	COMMENT
100	START			NO	
100	GIVEN	LENGTH	DISK		MAKE DISK SPEED = V_SPEED
100	ASSIGN	DISK	SPEED		
100		V	SPEED		TRANSFER TIME CALCULATED
100	EVAL	XFERTIME			
100	ALLOC	LENGTH/V	SPEED		DISK ALLOCATED
100		DISK	-1	ALL	
100	ASSIGN	\$PRIORITY	SEEK		MAKE SEEKTIME = SEEK
100		DISK			

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```

100 SEEK          SEEKTIME SEEKTIME TIME FOR SEEK IS CONSUMED
100 UNIFORM RESUME
100 MSECOS RESUME
100 DISK LATENCY
100 ASSIGN
100 LATENCY LATENCY LATENCY TIME CONSUMED FOR LATENCY
100 UNIFORM RESUME
100 MSECOS RESUME
100 XFER CONSTANT XFERTIME
100 MSECOS RESUME
100 DEALLOC DISK 1
100 END
100

```

```

=====
TOTAL          TOTAL          MEAN..... STD DEV... MINIMUM... MAXIMUM...
SAMPLES. SUM.....
=====
HQ_DATA
TOTAL          118          318.233          2.697          3.637          0.011          15.622
PROCESS WAIT          0          0.000          0.000          0.000          0.000          0.000
RESOURCE WAIT          78          318.906          4.063          3.789          0.011          15.611
=====

```

```

TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
118          0          118          118          0          78
=====

```

```

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

```

```

PROCESS HOLDING TIME
# SMPLS MEAN..... MINIMUM... MAXIMUM... STD DEV...
=====
MSG          118          2.70          0.01          15.62          3.64
=====

```

```

PROCESS          DESCRIPTION
=====
HQ_DATA          HQ GETS MESSAGE, FORMULATES RESPONSE, AND REPLIES
=====

```

```

COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
118          START
118          GIVEN MSG
118          RETURN MSG
118          ASSIGN MSG
118          V LENGTH
118          V LENGTH
118          V TIME
118          .015*V LENGTH
118          UPDATE
118          CONSTANT V TIME
118          MSECOS RESUME
118
=====
MAKE MSG-LENGTH = V_LENGTH
EVALUATE MSG PROCESS TIME
PROCESSING TIME CONSUMED

```

END

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
HQ REQ	48	1852.078	38.585	9.496	27.754	63.392
PROCESS WAIT	48	1852.078	38.585	9.496	27.754	63.392
RESOURCE WAIT	0	0	0	0	0	0

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

PROCESS DESCRIPTION
=====

COUNT ENTRY	OPCODE	PARM	PARM	COMMENT
48	START	L3	NO	
48	GIVEN	MSG		
48	RETURN	MSG		
48	CALL	WRS	WAIT	4 SREQRESP
48	GIVEN	PLANS	4	
48		200	CHQ	MSG
48	END			MAKES I/O REQUEST TO CHQ

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
MRS	522	37527.085	71.891	38.971	22.000	194.855
PROCESS WAIT	522	37527.085	71.891	38.971	22.000	194.855
RESOURCE WAIT	0	0	0	0	0	0

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

ITEM	CREATED	RECEIVED	SENT	DESTR'D
MSG	528	0	0	0

ITEM	# SMPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
PROCESS HOLDING TIME	528	0	0	0	0

PAGE 48 MSG 528 0. 0. 0. 0.

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

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
528	START	ALL	NO			
528	GIVEN	MSG	PRIORITY	MSG	TYPE	
528	CREATE	MSG	LNTH	TO	MSG	CREATE MESSAGE
528	ASSIGN	MSG	LNTH			SET MESSAGE LENGTH
528	ASSIGN	MSG	PROCESS	LENGTH		SET PROCESS
528	ASSIGN	MSG	PRIORITY	RPROC		SET PRIORITY
528	ASSIGN	MSG	PRIORITY	RPROC	PRI	SET DESTINATION
528	ASSIGN	MSG	TO	NODE		SET MESSAGE TYPE
528	ASSIGN	MSG	TYPE			EXECUTIVE SERVICING OF MSG
528	CALL	NODEPROC	WAIT	0		
528	GIVEN	MSG				
522	END					

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

PROCESS	TOTAL	SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
PROCESS WAIT	2570	115435.314	44.918	37.276	4.000	194.855	
RESOURCE WAIT	2570	80799.225	31.439	33.477	0.	183.451	
	2570	23488.016	9.132	18.028	0.	84.387	

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

ITEM	CREATED	RECEIVED	SENT	DESTR'D
MSG	0	0	0	0
	2570	2570	2570	0

PROCESS HOLDING TIME
 # SMPLS MEAN. MINIMUM. ... MAXIMUM. ... STD DEV. ...
 =====

ITEM	# SMPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
MSG	2570	13.48	1.00	86.99	10.10

PROCESS DESCRIPTION

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ITEM	# SMPLS	MEAN	MINIMUM	MAXIMUM	STD DEV
MSG	168	1.61	0.01	9.72	2.28

PROCESS DESCRIPTION
REQUEST FOR PLANS FROM CHQ

COUNT	ENTRY	OPCODE	PARAM	PARAM	COMMENT
168	START	CHQ	NO		
168	GIVEN	MSG			MAKE MSG LENGTH = V_LENGTH
168	RETURN	MSG			EVALUATE MSG PROCESS TIME
168	ASSIGN	MSG			TIME USED TO FORMAT PLANS
168	EVAL	V_LENGTH			CALLING PROCESS DISK_OP
168	FORMAT	CONSTANT V TIME			INCREASE MSG LENGTH
314	CALL	WSECONDS RESUME			
168	GIVEN	DISK_OP WAIT	10		
168	ASSIGN	500 DK1			
168	END	500			

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
TRACE	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 COMPLETE SUSPEND.

PROCESS	TOTAL	1	0	1	0
1	1	0	1	0	0

PROCESS DESCRIPTION
TURN ON TRACE OUTPUT

COUNT	ENTRY	OPCODE	PARAM	PARAM	COMMENT
1	START	ALL	NO		
1	COMPARE	V_TRACE			EQ TEST IF FLAG SET FOR TRACE
0	TRACE	ON			NOTRACE
0	TRACE	ON			

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1 NOTRACE ENTRY
1 END

APPENDIX C

Results Verification for

TESTDBE.DBF

SIMULATION TIME = 10000.00000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES....

TOTAL		VALUE			
VARIABLE	SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM .. MAXIMUM ..
VABS	2	10.000	10.000	0.	10.000 10.000
VADD	2	10.000	10.000	0.	10.000 10.000
VARCOS	89	2.000	2.000	0.	2.000 2.000
VARCSIN	89	1.142	1.142	+4.012E-08	1.142 1.142
VARCTAN	89	-1.142	-1.142	+2.764E-07	-1.142 -1.142
VBETA	89	0.828	0.777	0.990	0.427 10.000
VBIN	89	100.000	98.882	10.488	0.500 100.000
VCOMP1	2	12.000	6.000	6.000	0. 12.000
VCOMP2	2	53.150	26.575	26.575	0. 53.150
VCOMP3	2	9.000	4.500	4.500	0. 9.000
VCOMP4	2	7.135	3.567	3.567	0. 7.135
VCOS	89	-0.416	-0.416	+1.634E-08	-0.416 -0.416
VCTABLE	8	85.000	50.000	32.977	0. 100.000
VDIV	2	10.000	10.000	0.	10.000 10.000
VDTABLE	8	80.000	47.500	33.072	0. 100.000
VERLANG	89	9.710	11.173	10.250	3.937 100.000
VEXP	89	3.343	8.847	8.990	0.058 53.791
VEXP10	89	100.000	100.000	0.	100.000 100.000
VEXPE	89	100.000	100.000	+1.366E-05	100.000 100.000
VGAMMA	89	9.559	9.829	4.197	2.462 21.478
VLOG10	89	2.000	2.000	0.	2.000 2.000
VLOGE	89	4.605	4.605	+2.107E-08	4.605 4.605
VLOGN	89	18.377	10.271	5.588	2.850 36.699
VNULT	2	10.000	10.000	0.	10.000 10.000
VNBUSYQ	199	2.000	1.980	0.199	0. 2.000
VNIDLEQ	199	0.	0.010	0.141	0. 0.141
VNORMAL	89	15.818	10.415	4.679	-3.137 22.380
VNWAITQ	199	198.000	97.518	50.825	0. 198.000
VPOISSON	89	7.000	11.371	10.998	1.000 110.000
VPOWER	2	10.000	10.000	+1.907E-08	10.000 10.000
VRAN	89	0.660	0.548	0.255	0.000 0.993
VSIN	89	0.909	0.909	+4.280E-08	0.909 0.909
VSQRT	2	10.000	10.000	0.	10.000 10.000
VSUB	2	10.000	10.000	0.	10.000 10.000
VTAN	89	-2.185	-2.185	+2.350E-08	-2.185 -2.185
VUNIFORM	89	9.973	10.321	2.695	5.232 14.917
VWEIBULL	89	5.224	4.916	0.749	3.314 10.000

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NON-NUMERIC VARIABLES...
CURRENT CURRENT
VARIABLE TYPE VALUE
=====

RESOURCE REPORT

[illegible]

[illegible][illegible][illegible][illegible][illegible]

PAGE 20

SIMULATION TIME = 10000.00000 SECONDS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN	STD DEV	MINIMUM	MAXIMUM	% TIME OF TOTAL
EVALUATE						
USEFUL TIME	361	62.045	39.195	0.365	101.563	220.149
DELAY TIME	361	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.
PROCESS						
USEFUL TIME	581	83.018	61.268	0.	327.750	482.337
DELAY TIME	581	0.	0.	0.	0.	0.
WASTED TIME	0	0.	0.	0.	0.	0.

SIMULATION TIME = 10000.00000 SECONDS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
OFD1						
TOTAL	00	7759.167	90.223	77.500	0.451	327.750
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.
 00 00 0 00 2 0

PROCESS DESCRIPTION
 OFD1 TEST EXPONENTIAL DISTRIBUTION AND COMPARE

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
00	START	ALL	NO			
00	CALL	OFDINIT	NOWAIT	0		INITIATE ODS 0-10
00	PROCESS	EXPONENT	100.0			TEST EXPONENTIAL ACTION
00	SECONDS	RESUME				
00	ASSIGN	1.0				
00	LOCAL1					
00	ASSIGN	2.0				
00	LOCAL2					
00	ASSIGN	3.0				
00	LOCAL3					
00	ENTRY	TESTEQ				TEST COMPARE EQ
00	COMPARE	LOCAL1				
00	LOCAL2					
00	EQTEST	EQTEST	100			TEST FALL THRU
00	ENTRY	LOCAL3				
00	COMPARE	LOCAL3				
00	TESTNE	TESTNE	100			TEST FALL THRU
00	ENTRY	LOCAL3				
00	COMPARE	LOCAL3				
00	NETEST	NETEST	100			TEST COMPARE NE
00	ENTRY	LOCAL1				
00	COMPARE	LOCAL2				
00	TESTLT					

	TEST LT	BRANCH ENTRY COMPARE	TEST LT	100	LT TEST	TEST FALL THRU COMPARE LT
0000	TEST LT	BRANCH ENTRY COMPARE	LOCAL3 LOCAL1 LTTEST	100	LT TEST	TEST FALL THRU COMPARE LT
0000	LTTEST	BRANCH ENTRY COMPARE	LOCAL1 LOCAL3 TESTGT	100	LT TESTGT	TEST FALL THRU COMPARE GT
0000	TESTGT	BRANCH ENTRY COMPARE	LOCAL1 LOCAL2 GTEST	100	GT GTEST	TEST FALL THRU
0000	GTEST	BRANCH ENTRY COMPARE	LOCAL2 LOCAL1 TESTLE	100	GT TESTLE	TEST FALL THRU COMPARE LE
0000	TESTLE	BRANCH ENTRY COMPARE	LOCAL3 LOCAL1 LETEST1	100	LE LETEST1	TEST FALL THRU
0000	LETEST1	BRANCH ENTRY COMPARE	LOCAL2 LOCAL2 LETEST2	100	LE LETEST2	TEST FALL THRU
0000	LETEST2	BRANCH ENTRY COMPARE	LOCAL1 LOCAL3 TESTGE	100	LE TESTGE	TEST FALL THRU COMPARE GE
0000	TESTGE	BRANCH ENTRY COMPARE	LOCAL1 LOCAL3 GETEST1	100	GE GETEST1	TEST FALL THRU
0000	GETEST1	BRANCH ENTRY COMPARE	LOCAL2 LOCAL2 GETEST2	100	GE GETEST2	TEST FALL THRU
0000	GETEST2	BRANCH ENTRY COMPARE	LOCAL3 LOCAL1 TESTEND	100	GE TESTEND	TEST FALL THRU END OFD COMPARE TESTING
0000	TESTEND	BRANCH ENTRY END				

PROCESS	TOTAL	SAMPLES.	SUM.....	MEAN.....	STD DEV...	MINIMUM...	MAXIMUM...
0FD10	00	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	COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
00FD10	TEST INTERVAL SCHEDULE AND EVAL TRIG FUNCTIONS							
88			START	ALL	NO			
88			EVAL	VLOG10				
88				LOG10(100.0)				
88			EVAL	VEXP10				
88				10.0**VLOG10				
88			EVAL	VLOGE				
88				LOGE(100.0)				
88			EVAL	VEXPE				
88				2.718281**VLOGE				
88			EVAL	VSIN				
88				SINE(2)				
88			EVAL	VARCSIN				
88				ARCSINE(VSIN)				
88			EVAL	VCOS				
88				COSINE(2)				
88			EVAL	VARCOS				
88				ARCOSINE(VCOS)				
88			EVAL	VTAN				
88				TANGENT(2)				
88			EVAL	VARCTAN				
88				ARCTAN(VTAN)				
88			END					

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
OFD11	198	508849.580	2569.947	1418.633	100.000	4920.949
PROCESS WAIT	0	0.	0.	0.	0.	0.
RESOURCE WAIT	200	498850.501	2494.253	1432.088	0.	4988.481

TOTAL # SCHEDULE	# AUTO SCHEDULE	# CALL SCHEDULE	# OF COMPLETE	# NOT COMPLETE	# TIMES SUSPEND.
390	0	396	198	198	0

```

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

COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
396  START  ALL  NO
396  ALLOC  RES1  1  ALL  TEST ALLOCATE
396  $PRIORITY
200  PROCESS  CONSTANT 100.0
200  SECONDS  RESUME
198  DEALLOC RES1  1  TEST DEALLOCATE
198  END

```

```

TOTAL
PROCESS  SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
OFD12
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
=====
OFD12      TEST COMPLEX ARITHMETIC EVALUATIONS

COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
1  START  ALL  NO
1  EVAL  VCOMP1
1  RES1[ATTR1]*(RES1[NIDLEQ]
1  + TDIS(1))
1  EVAL  VCOMP2
1  EVAL  20.5 * 2.3 - RES1[ATTR3]
1  EVAL  VCOMP3
1  INTEGER(RANDOM*10) + 6
1  EVAL  VCOMP4
1  EXPONENT(10.0)*(RES1[ATTR2
1  ]*TCON(2))
1  END

```

```

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

```



```

PROCESS          DESCRIPTION
=====
OFD3          TEST NORMAL DISTRIBUTION
=====

```

```

COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
100          START    ALL    NO
100          PROCESS  NORMAL 100.0 100.0
100          RESOURCE SECONDS RESUME
100          END
=====

```

```

TOTAL
PROCESS  SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
OFD4
TOTAL          98  9814.305  100.146  66.550  0.125  199.414
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  PARM  COMMENT
=====
99          START    ALL    NO
99          PROCESS  UNIFORM 100.00 100.00
99          SECONDS RESUME
98          END
=====

```

```

TOTAL
PROCESS  SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
OFD6
TOTAL          96  945.330  9.951  0.339  0.365  32.634
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.
=====
96 96 0 95 0 0
=====

```



```

PROCESS      DESCRIPTION
=====
OFD5      TEST ERLANG DISTRIBUTION
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
95      START      ALL      NO
95      EVALUATE  10.0  2.0  TEST
96      SECONDS
96      RESUME
95      END
=====

```

```

TOTAL
SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM. ... MAXIMUM. ...
=====
OFD6      TOTAL      86  8549.888  99.417  1.200  94.362  101.503
PROCESS WAIT  0.0  0.0  0.0  0.0  0.0
RESOURCE WAIT  0.0  0.0  0.0  0.0  0.0
=====
TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
86  0  88  86  2  0
=====

```

```

PROCESS      DESCRIPTION
=====
OFD8      TEST WEIBULL DISTRIBUTION
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
88      START      ALL      NO
88      EVALUATE  100.0  100.0  TEST
88      SECONDS
88      RESUME
88      END
=====

```

```

TOTAL
SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM. ... MAXIMUM. ...
=====
OFD7      TOTAL      87  4369.666  50.111  14.727  27.777  93.686
PROCESS WAIT  0.0  0.0  0.0  0.0  0.0
RESOURCE WAIT  0.0  0.0  0.0  0.0  0.0
=====
TOTAL # AUTO # CALL # OF # NOT # TIMES
SCHEDULE SCHEDULE SCHEDULE COMPLETE COMPLETE SUSPEND.
=====
88  0  89  87  1  0
=====

```

```

PROCESS      DESCRIPTION
=====

```

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=====

TEST GAMMA DISTRIBUTION

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
88	START	ALL	NO			
88	EVALUATE	GAMMA	50.0	10.0		TEST
88	SECONDS	RESUME				
87	END					

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

OFD8

TOTAL	PROCESS WAIT	RESOURCE WAIT	88	0.	0.	0.	0.	0.	0.	0.
88	0	0	0.	0.	0.	0.	0.	0.	0.	0.

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

88 0 88 88 0 0

PROCESS DESCRIPTION
=====

TEST POISSON SCHEDULE AND EVAL DISTRIBUTIONS

OFD8

COUNT	ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
88	START	ALL	NO			
88	EVAL	VRAN				
88		RANDOM				
88	EVAL	VBIN				
88		BINOMIAL	(100.0,10.0)			
88	EVAL	VBETA				
88		BETA	(10.0,5.0)			
88	EVAL	VERLANG				
88		ERLANG	(10.0,5.0)			
88	EVAL	VEXP				
88		EXPONENT	(10.0)			
88	EVAL	VGAMMA				
88		GAMMA	(10.0,5.0)			
88	EVAL	VLOGN				
88		LOGNORMAL	(10.0,5.0)			
88	EVAL	VNORMAL				
88		NORMAL	(10.0,5.0)			
88	EVAL	VPOISSON				
88		POISSON	(10.0)			
88	EVAL	VUNIFORM				

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UNIFORM(10.0,5.0)
VWEIBULL
WEIBULL(10.0,5.0)
EVAL
END

```

PROCESS
=====
TOTAL          SUM          MEAN          STD DEV... MINIMUM... MAXIMUM...
=====
OFD9          86  8600.000  100.000 +2.017E-05  100.000  100.000
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 SUSPEND.
=====
88  0  88  2  0

```

```

PROCESS
=====
DESCRIPTION
=====
TEST START SCHEDULE AND CONSTANT ACTION
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
88  START  ALL  NO
88  EVALUATE  CONSTANT 100.00
88  SECONDS  RESUME
88  END

```

```

PROCESS
=====
TOTAL          SUM          MEAN          STD DEV... MINIMUM... MAXIMUM...
=====
OFDINIT
TOTAL          88  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.
=====
88  0  88  0  0

```

```

PROCESS
=====
DESCRIPTION
=====
OFD INITIATOR FOR 6 THROUGH 10
=====
COUNT ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
88  START  ALL  NO

```


1	EVAL	SECONDS	RESUME
1		VPOWER	
1	EVALUATE	3.16277**2.0	
1		CONSTANT VPOWER	
1	EVAL	SECONDS	RESUME
1		VSQRT	
1	EVALUATE	SQRT(100.0)	
1		CONSTANT VSQRT	
1	EVAL	SECONDS	RESUME
1		VABS	
1	EVALUATE	ABSOLUTE(-10.0)	
1		CONSTANT VABS	
1	EVAL	SECONDS	RESUME
1		VCTABLE	
1	EVAL	TCON(-60)	
1		VDTABLE	
1	EVAL	TDIS(-80.0)	
1		VCTABLE	
1	EVAL	TCON(1060.0)	
1		VDTABLE	
1	EVAL	TDIS(1060.0)	
1		VCTABLE	
1	EVAL	TCON(160.0)	
1		VDTABLE	
1	EVAL	TDIS(160.0)	
1		VCTABLE	
1	EVAL	TCON(260.0)	
1		VDTABLE	
1	EVAL	TDIS(260.0)	
1		VCTABLE	
1	EVAL	TCON(600.0)	
1		VDTABLE	
1	EVAL	TDIS(600.0)	
1		VCTABLE	
1	EVAL	TCON(760.0)	
1		VDTABLE	
1	EVAL	TDIS(760.0)	
1		VCTABLE	
1	EVAL	TCON(860.0)	
1		VDTABLE	
1	EVAL	TDIS(860.0)	
1	END		

APPENDIX C

Results Verification for
TESTDBF.DBF

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04/21/1987 10:19:04

TESTDBF

TEST ERROR HANDLING OF ARITHMETIC EXPRESSIONS - WITH CORRECTIONS

C-113

PAGE 6

SIMULATION TIME = 100.00000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES

TOTAL		VALUE				
VARIABLE	SAMPLES	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
VCOMP1	2	34.000	17.000	17.000	0.	34.000
VCOMP2	2	63.150	26.675	26.675	0.	63.150
VCOMP3	2	9.000	4.500	4.500	0.	9.000
VCOMP4	2	4.135	2.067	2.067	0.	4.135
VCOMP5	2	20.000	13.000	13.000	0.	20.000
VDTABLE	2	80.000	65.000	15.000	50.000	80.000

NON-NUMERIC VARIABLES

VARIABLE	CURRENT
TYPE	VALUE

SIMULATION TIME = 100.00000 SECONDS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
RES1		2.000	2.000	0.	2.000	2.000
# IDLE						
REQUEST TIME	0		0.	0.	0.	0.
HOLD TIME			0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0					
# BUSY		0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0					
# WAITING		0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONEPROCESSES CURRENTLY
WAITING: NONE

PAGE 8

SIMULATION TIME = 100.00000 SECONDS

PROCESS REPORT

PROCESS	TOTAL SAMPLES	SUM	MEAN	STD DEV	MINIMUM	MAXIMUM
OFD1	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.

=====

PROCESS DESCRIPTION
=====

TEST COMPLEX ARITHMETIC EVALUATIONS

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	START	ALL	NO			
1	EVAL	VCOMP1				
1			RES1[ATTR1] + (RES1[NIDLEQ]			
1			+ TDIS(1)) * 12			
1	EVAL	VCOMP2				
1			20.5 * 2.3 - RES1[ATTR3]			
1	EVAL	VCOMP3				
1			INTEGER (RANDOM*10) + 5			
1	EVAL	VCOMP4				
1			EXPONENT(10.0) + (RES1[ATTR2]			
1			] * TDIS(2))			
1	EVAL	VDTABLE				
1			VDIS(860.0)			
1	EVAL	VCOMP5				
1			RES1[ATTR1] + 10			
1	END					

APPENDIX D

Model Description for

TESTCONV3.DBF

Before Conversion

```

#####
3  SIMULATION REPORT
3
3  AISIM VERSION 4.1
3
3  HUGHES AIRCRAFT COMPANY
3  12/01/84
3
#####
GLOBAL CONSTANT DEFINITION.....

```

```

CONSTANT INITIAL      COMMENT
=====
WNEWONIC VALUE
CONSI  22  GLOBAL CONSTANT WITH VALUE = 10
=====

```

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

```

VARIABLE INITIAL      COMMENT
=====
WNEWONIC VALUE
V.COUNT1 10  GLOBAL VARIABLE
VAR2  RES1  GLOBAL VARIABLE HOLDING RESOURCE
VAR3  $ERRR  GLOBAL VARIABLE HOLDING ALPHA LITERAL
=====

```

ITEM DEFINITION.....

```

ITEM      =====
ITEM1     =====
ATTR.     INITIAL
NAME      VALUE
=====
LENGTH    $LENGTH
=====
DESCRIPTION
=====
M ON THE LIST WITH A SINGLE ATTRIBUTE
=====

```

```

ITEM      =====
ITEM2     =====
ATTR.     INITIAL
NAME      VALUE
=====
CNODE     $CNODE
FNODE     $CNODE
LENGTH    99999999
PTASK     $ERRRR
RESPONSE  $WAIT
=====
DESCRIPTION
=====
SECOND ITEM ON THE LIST WITH LOTS OF ATTRIBUTES
=====

```

PAGE 2
 RTASK \$ERROR
 TASKPRI 9999999
 TMODE RES1
 TYPE 5

QUEUE DEFINITION.....

QUEUE	MAXIMUM	COMMENT
=====	=====	=====
MNEMONIC	SIZE	
=====	=====	=====
QUEUE1	INFINITE	INFINITE HOLDING AREA
QUEUE2	100	LIMITED SIZE HOLDING AREA

RESOURCE DEFINITION.....

RESOURCE	TOTAL	INITIAL	DESCRIPTION
=====	=====	=====	=====
MNEMONIC	# UNITS	# UNITS	
=====	=====	=====	=====
RES1	1	1	TEST RESOURCE

ATTR.	INITIAL
=====	=====
NAME	VALUE
=====	=====
COST	0
NETINSTR	80
OSOVHD	0
SPEED	5000

ARCHITECTURE LEGAL PATH DEFINITION

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

ACTION DEFINITION.....

ACTION	ACTION	COMMENT
=====	=====	=====
MNEMONIC	CLASS	
=====	=====	=====
DELAY	MAN	MAN-MADE DELAY
OVHD	MACHINE	OVERHEAD DELAY

PROCESS DEFINITION.....

PROCESS	DESCRIPTION
=====	=====
MNEMONIC	
=====	=====
INIT1	TEST CALL BLOCK

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```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
ASSIGN 1
=====
NEXT   ENTRY  COMPARE  L      GT      WAIT
      CALL  V.COUNT1  L      PROCESS1  BLOCK  L
      GIVEN L      ADD      1
      EVAL  L      NEXT  100
      BRANCH ENTRY
      ENTRY WAIT
      END
=====
INITIALIZE COUNTER
CONTINUE FOR ALL CALLS
TEST VALUE OF COUNTER
INITIATE PARALLEL INSTANT
INCREMENT COUNTER
RETURN TO TOP
ENTRY
=====

```

```

=====
LOCAL VARIABLES OF PROCESS INIT1
=====
1 L
PROCESS 2 PROCESS1 (P)
=====
DESCRIPTION
=====
CREATE, SEND, ACTION DELAY FOR 6 ITEMS
=====
INIT2
=====

```

```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
ENTRY  ITEM1
SEND  PROCESS2 ITEM1
DELAY CONSTANT 1
LOOP  NEXT  V.COUNT1
END
=====
NEXT   ENTRY  CREATE  L      WAIT
      SEND  PROCESS2 ITEM1
      DELAY CONSTANT 1
      LOOP  NEXT  V.COUNT1
      END
=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
ENTRY  ITEM1
SEND  PROCESS2 ITEM1
DELAY CONSTANT 1
LOOP  NEXT  V.COUNT1
END
=====

```

```

=====
LOCAL VARIABLES OF PROCESS INIT2
=====
1 ITEM1 (1) 2 PROCESS2 (P) 3 DELAY (A)
=====
PROCESS 2 PROCESS2 (P) 3 DELAY (A)
=====
DESCRIPTION
=====
PROCESS CALLED BLOCK
=====
PROCESS1
=====

```

```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
=====

```

```

PAGE 4 GIVEN TIME CONSTANT TIME DELAY FOR BLOCK
      DELAY
      END

LOCAL VARIABLES OF PROCESS PROCESS1
=====
1 TIME 2 DELAY (A)
=====
PROCESS DESCRIPTION
=====
PROCESS2 RECEIVE AND FILE ITEM
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
RECEIVE ITEM1 LAST QUEUE1
FILE ITEM1
CALL PROCESS3 NOWAIT 0
END

LOCAL VARIABLES OF PROCESS PROCESS2
=====
1 ITEM1 (T) 2 QUEUE1 (Q) 3 PROCESS3 (P)
=====
PROCESS DESCRIPTION
=====
PROCESS3 DESTROY ITEMS -- SERIAL # NO MATCH
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
REMOVE FIRST ITEM QUEUE1
DESTROY ITEM DESTROY ITEM
END

LOCAL VARIABLES OF PROCESS PROCESS3
=====
1 ITEM (X) 2 QUEUE1 (Q)
=====
PROCESS DESCRIPTION
=====
PROCESS3 GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O
REQ-I/O
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO

```

PROCESS	PRIORITY	RESP.OPT	
MSG.LNTH	TO.NODE	MSG	
CREATE	MSG		CREATE MESSAGE DATA TO RTE
ASSIGN	\$CNODE		INDICATE CURRENT NODE
ASSIGN	MSG	CNODE	INDICATE CURRENT FROM NODE
ASSIGN	MSG	FNODE	INDICATE REQUESTED PROCESS
ASSIGN	PROCESS	RTASK	INDICATE RELATIVE PRIORITY
ASSIGN	PRIORITY	TASKPRI	RESPONSE TYPE
ASSIGN	MSG	RESP.OPT	
CALL	ROUTER	WAIT	0
GIVEN	MSG		
END			

LOCAL VARIABLES OF PROCESS REQ-I/O

```

=====
1 PROCESS (X) 2 PRIORITY 3 RESP.OPT 4 MSG.LNTH
5 TO.NODE 6 MSG 7 ROUTER (P)
PROCESS
MNEMONIC
ROUTER
=====
DESCRIPTION
=====
INTERRUPT HANDLING AND ROUTING
=====

```

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
START	ALL		NO		
GIVEN	MSG		CNODE		INDICATE CURRENT NODE CPU
ASSIGN	MSG		CP		IS MSG AT DESTINATION?
COMPARE	MSG	CNODE	EQ		
ASSIGN	MSG	CP	TNODE	EXIT	
TEST	CP	M.OVHD	NETINSTR		
ALLOC	CP		EXIT		ALLOCATE NODE
OVHD	CONSTANT	M.OVHD			DELAY FOR ROUTING
DEALLOC	CP				DEALLOCATE NODE
RESET	CP	-1			MAKE NODE UNAVAILABLE
ENTRY					
END					

LOCAL VARIABLES OF PROCESS ROUTER

```

=====
1 MSG 2 CP 3 M.OVHD 4 OVHD (A)
=====

```


PAGE 6

PROCESS
MNEMONIC
=====

DESCRIPTION

TOHOST1

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
CALL	REQ-I/O	WAIT	0		INITIATE I/O REQUEST
GIVEN	T01	PRI	SNOWAIT		
	36	RES1	ITEM2		
END					

LOCAL VARIABLES OF PROCESS TOHOST1
=====

	1 REQ-I/O (P)	2 T01	3 PRI	4 RES1
5 ITEM2 (I)				

(R)

LOAD DEFINITION.....

LOAD
MNEMONIC
=====

LOAD1

LOAD

NODES

=====

RES1

PROCESS	MNEMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	PRIORITY
INIT1		1	START				0
INIT2		1	START				0
TOHOST1		1	START				0

SCENARIO DEFINITION....

SCENARIO
MNEMONIC
=====

PSCEN

=====

SCENARIO FOR TEST RUN

PERIOD
LENGTH
=====

100

PAGE 7

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC
=====

1

TRIGGER TIME TO SCHEDULE TRIGGER TIME TO SCHEDULE
MNEMONIC SCHEDULE PRIORITY MNEMONIC SCHEDULE PRIORITY
=====

LOAD1 0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX D

Model Description for

TESTCONV4.DBF

Before Conversion

PAGE 2

RTASK \$ERROR
TASKPRI 99999999
TMODE RES1
TYPE 5

QUEUE DEFINITION.....

QUEUE	MAXIMUM	COMMENT
MNEMONIC	SIZE	
=====	=====	=====
QUEUE1	INFINITE	INFINITE HOLDING AREA
QUEUE2	100	LIMITED SIZE HOLDING AREA

RESOURCE DEFINITION.....

RESOURCE	TOTAL	INITIAL	DESCRIPTION
MNEMONIC	# UNITS	# UNITS	
=====	=====	=====	=====
RES1	1	1	TEST RESOURCE
ATTR	INITIAL		
NAME	VALUE		
=====	=====		
COST	0		
NETINSTR	80		
OSOVHD	0		
SPEED	5000		

ARCHITECTURE LEGAL PATH DEFINITION

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

ACTION DEFINITION.....

ACTION	ACTION	COMMENT
MNEMONIC	CLASS	
=====	=====	=====
DELAY	MAN	MAN-MADE DELAY
OVHD	MACHINE	OVERHEAD DELAY

PROCESS DEFINITION.....

PROCESS	DESCRIPTION
MNEMONIC	
=====	=====
INIT1	TEST CALL BLOCK

PAGE 3

```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
ASSIGN 1
=====
INITIALIZE COUNTER

NEXT   ENTRY  COMPARE  L  V.COUNT1  GT  WAIT
      CALL   PROCESS1 BLOCK  L
      GIVEN  L
      EVAL   L
      BRANCH NEXT      100
      ENTRY  WAIT
      END
=====
CONTINUE FOR ALL CALLS
TEST VALUE OF COUNTER

INITIATE PARALLEL INSTANT
INCREMENT COUNTER

RETURN TO TOP
ENTRY
=====

```

```

=====
LOCAL VARIABLES OF PROCESS INIT1
=====
1 L
PROCESS MNEMONIC
=====
DESCRIPTION
=====
CREATE, SEND, ACTION DELAY FOR 6 ITEMS
INIT2
=====

```

```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
ENTRY  CREATE  ITEM1
SEND   PROCESS2 ITEM1
DELAY  CONSTANT 1
LOOP   NEXT    V.COUNT1
END
=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
ENTRY  CREATE  ITEM1
SEND   PROCESS2 ITEM1
DELAY  CONSTANT 1
LOOP   NEXT    V.COUNT1
END
=====

```

```

=====
LOCAL VARIABLES OF PROCESS INIT2
=====
1 ITEM1 (I) 2 PROCESS2 (P) 3 DELAY (A)
PROCESS MNEMONIC
=====
DESCRIPTION
=====
PROCESS CALLED BLOCK
PROCESS1
=====

```

```

=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
=====

```

```

PAGE      4      GIVEN TIME      DELAY FOR BLOCK
      DELAY CONSTANT TIME
      END

LOCAL VARIABLES OF PROCESS PROCESS1
=====
1 TIME      2 DELAY (A)
PROCESS
MNEMONIC    DESCRIPTION
=====
PROCESS2    RECEIVE AND FILE ITEM
=====

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
RECEIVE ITEM1
FILE   ITEM1    LAST  QUEUE1
CALL   PROCESS3 NOWAIT 0
END

LOCAL VARIABLES OF PROCESS PROCESS2
=====
1 ITEM1 (I) 2 QUEUE1 (Q) 3 PROCESS3 (P)
PROCESS
MNEMONIC    DESCRIPTION
=====
PROCESS3    DESTROY ITEMS -- SERIAL # NO MATCH
=====

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO
REMOVE FIRST ITEM  QUEUE1
DESTROY ITEM
END

LOCAL VARIABLES OF PROCESS PROCESS3
=====
1 ITEM (X) 2 QUEUE1 (Q)
PROCESS
MNEMONIC    DESCRIPTION
=====
REQ-I/O     GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O
=====

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  ALL      NO

```

PAGE 5

GIVEN	PROCESS	PRIORITY	RESP. OPT
MSG	MSG.LNTH	TO NODE	MSG
CREATE	MSG		CREATE MESSAGE DATA TO RTE
ASSIGN	\$CNODE		INDICATE CURRENT NODE
	MSG	CNODE	INDICATE CURRENT FROM NODE
ASSIGN	\$CNODE	FNODE	INDICATE REQUESTED PROCESS
ASSIGN	MSG	RTASK	INDICATE RELATIVE PRIORITY
ASSIGN	MSG	TASKPRI	RESPONSE TYPE
ASSIGN	MSG	RESP. OPT	
CALL	ROUTER	WAIT	0
GIVEN	MSG		
END			

LOCAL VARIABLES OF PROCESS REQ-I/O

1 PROCESS (X)	2 PRIORITY	3 RESP. OPT	4 MSG.LNTH
5 TO NODE	6 MSG	7 ROUTER (P)	

PROCESS

=====

DESCRIPTION

=====

ROUTER

=====

INTERRUPT HANDLING AND ROUTING

=====

ENTRY	OPCODE	PARAM	PARAM	PARAM	COMMENT
=====	=====	=====	=====	=====	=====
START	ALL		NO		
GIVEN	MSG		CNODE		INDICATE CURRENT NODE CPU
ASSIGN	MSG		CP		
COMPARE	MSG		CNODE	EQ	IS MSG AT DESTINATION?
	MSG		TNODE	EXIT	
ASSIGN	CP		NETINSTR		
	M.OVHD				
TEST	CP		EXIT		ALLOCATE NODE
ALLOC	CP		1	ALL	
	\$PRIORITY				DELAY FOR ROUTING
OVHD	CONSTANT		M.OVHD		DEALLOCATE NODE
DEALLOC	CP		1		MAKE NODE UNAVAILABLE
RESET	CP		-1		
ENTRY					
END					

LOCAL VARIABLES OF PROCESS ROUTER

=====	=====	=====	=====
1 MSG	2 CP	3 M.OVHD	4 OVHD (A)

PAGE 6

PROCESS
===== DESCRIPTION
=====

TOHOST1

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START	ALL	NO			
CALL	REQ-I/O	WAIT	0		INITIATE I/O REQUEST
GIVEN	TO1	PRI	\$NOWAIT		
	38	RES1	ITEM2		
=====	=====	=====	=====	=====	=====
					END

LOCAL VARIABLES OF PROCESS TOHOST1
===== (R)
1 REQ-I/O (P) 2 TO1 3 PRI 4 RES1
5 ITEM2 (I)

LOAD DEFINITION.....

LOAD
===== DESCRIPTION
=====

LOAD1

LOAD
===== LOAD FOR MODEL RUN
===== NODES
===== RES1

PROCESS	WNEMONIC	MAX #	SCHEDULE	METHOD	MEAN	DELTA	PRIORITY
=====	=====	=====	=====	=====	=====	=====	=====
INIT1	1	1	START				0
INIT2	1	1	START				0
TOHOST1	1	1	START				0

SCENARIO DEFINITION.....

SCENARIO
===== DESCRIPTION
=====

PSCEN

PERIOD
LENGTH
===== 100

PAGE 7

PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD
MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC
=====

1

TRIGGER TIME TO SCHEDULE TRIGGER TIME TO SCHEDULE
MNEMONIC SCHEDULE PRIORITY MNEMONIC SCHEDULE PRIORITY
=====

LOAD1 0 0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX D

Model Description for
TESTCONV3.DBF and TESTCONV4.DBF
After Conversion

```

#####
S I M U L A T I O N   R E P O R T
#####
S      AISIM VERSION 5.0
S      HUGHES AIRCRAFT COMPANY
S      06/16/87
#####

```

04/22/19 10:08:49

GLOBAL CONSTANT DEFINITION.....

```

CONSTANT INITIAL      COMMENT
=====
MNEMONIC VALUE      =====
CONS1 22  GLOBAL CONSTANT WITH VALUE = 10
=====

```

FILE DEFINITION.....

```

FILE      COMMENT
=====
MNEMONIC      =====

```

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

```

VARIABLE INITIAL      COMMENT
=====
MNEMONIC VALUE      =====
VAR2 RES1  GLOBAL VARIABLE HOLDING RESOURCE
VAR3 $ERROR  GLOBAL VARIABLE HOLDING ALPHA LITERAL
V_COUNT1 10  GLOBAL VARIABLE
=====

```

ITEM DEFINITION.....

```

ITEM      DESCRIPTION
=====
ITEM1      M ON THE LIST WITH A SINGLE ATTRIBUTE
=====
ATTR.      INITIAL
NAME       VALUE
=====
LENGTH     $LENGTH
=====

```

```

ITEM      DESCRIPTION
=====

```

```

=====
ATTR      INITIAL
NAME      VALUE
=====
CNODE     $CNODE
FNODE     $CNODE
LENGTH   99999999
TASK     $ERROR
RESPONSE $WAIT
RTASK    $ERROR
TASKPRI  99999999
TNODE    RES1
TYPE     5
=====

```

QUEUE DEFINITION.....

```

=====
QUEUE    MAXIMUM
MNEMONIC SIZE  COMMENT
=====
=====
QUEUE1   INFINITE INFINITE HOLDING AREA
QUEUE2   100      LIMITED SIZE HOLDING AREA
=====

```

RESOURCE DEFINITION.....

```

=====
RESOURCE TOTAL  INITIAL
MNEMONIC # UNITS # UNITS  DESCRIPTION
=====
=====
RES1      1      1      INITIAL
          NAME      VALUE
          =====
          COST      0
          NETINST  80
          OSOVHD    0
          SPEED     5000
          =====

```

ARCHITECTURE LEGAL PATH DEFINITION

```

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

```

ACTION DEFINITION.....

```

=====
ACTION
MNEMONIC COMMENT
=====
=====
DELAY    MAN-MADE DELAY
=====

```

PAGE 3 OVERHEAD DELAY
OVHD

PROCESS DEFINITION.....

PROCESS MNEMONIC
===== DESCRIPTION
===== TEST CALL BLOCK
INIT1

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START	ALL	NO			INITIALIZE COUNTER
ASSIGN	1				
ENTRY	COMPARE	L			CONTINUE FOR ALL CALLS
COMPARE			GT		TEST VALUE OF COUNTER
			WAIT		
			L		INITIATE PARALLEL INSTANT
CALL	V COUNT1				
GIVEN	PROCESS1 BLOCK				INCREMENT COUNTER
EVAL	L				
			(L	)* (1	RETURN TO TOP
			100	)	ENTRY
BRANCH	NEXT				
ENTRY					
WAIT					
END					

LOCAL VARIABLES OF PROCESS INIT1
===== 1 L
===== 2 PROCESS1 (P)
=====

GLOBAL VARIABLES OF PROCESS INIT1
===== 1 V COUNT1
===== PROCESS_
===== MNEMONIC
===== DESCRIPTION
===== CREATE, SEND, ACTION DELAY FOR 6 ITEMS
INIT2

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
=====	=====	=====	=====	=====	=====
START	ALL	NO			ENTRY
ENTRY					CREATE AN ITEM
CREATE	ITEM1				SEND AN ITEM TO PROCESS
SEND	PROCESS2 ITEM1				DELAY FOR ACTION
DELAY	CONSTANT 1				
	SECONDS				
LOOP	RESUME				
NEXT	V_COUNT1				

```

PAGE          4          END
LOCAL VARIABLES OF PROCESS INIT2
=====
1 ITEM1      (I)  2 PROCESS2 (P)  3 DELAY (A)
=====
GLOBAL VARIABLES OF PROCESS INIT2
=====
1 V COUNT1
PROCESS
=====
MNEMONIC      DESCRIPTION
=====
PROCESS1      PROCESS CALLED BLOCK
=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START   =====
GIVEN   =====
DELAY   =====
        TIME
        CONSTANT TIME
        SECONDS    RESUME
        END
        DELAY FOR BLOCK
=====
LOCAL VARIABLES OF PROCESS PROCESS1
=====
1 TIME
=====
2 DELAY (A)
=====
PROCESS
=====
MNEMONIC      DESCRIPTION
=====
PROCESS2      RECEIVE AND FILE ITEM
=====
ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START   =====
RECEIVE ITEM1
FILE    ITEM1
CALL    PROCESS3 NOWAIT 0
END
=====
LOCAL VARIABLES OF PROCESS PROCESS2
=====
1 ITEM1      (I)  2 QUEUE1 (Q)  3 PROCESS3 (P)
=====
PROCESS
=====
MNEMONIC      DESCRIPTION
=====
PROCESS3      DESTROY ITEMS -- SERIAL # NO MATCH
=====

```

```

PAGE 5
ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
REMOVE FIRST ITEM QUEUE1
DESTROY ITEM
END

```

```

LOCAL VARIABLES OF PROCESS PROCESS3
=====
1 ITEM (X) 2 QUEUE1 (Q)
PROCESS
MNEMONIC DESCRIPTION
REQ_I_0 GENERATE A PROCESS REQUEST MESSAGE AND INITIATE I/O
=====

```

```

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
GIVEN PROCESS PRIORITY RESP OPT
MSG_LNTH TO_NODE MSG_
CREATE MSG CNODE
ASSIGN MSG CNODE
ASSIGN MSG FNODE
ASSIGN MSG PROCESS
ASSIGN MSG RTASK
ASSIGN MSG PRIORITY
ASSIGN MSG RESP_OPT TASKPRI
CALL MSG_ROUTER RESPONSE
GIVEN MSG_ROUTER WAIT 0
END
=====
CREATE MESSAGE DATA TO RTE
INDICATE CURRENT NODE
INDICATE CURRENT FROM NODE
INDICATE REQUESTED PROCESS
INDICATE RELATIVE PRIORITY
RESPONSE TYPE
=====

```

```

LOCAL VARIABLES OF PROCESS REQ_I_0
=====
1 PROCESS (X) 2 PRIORITY 3 RESP_OPT 4 MSG_LNTH
6 TO_NODE 6 MSG 7 ROUTER (P)
PROCESS
MNEMONIC DESCRIPTION
ROUTER INTERRUPT HANDLING AND ROUTING
=====

```

```

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
=====

```



```

PAGE 8
GIVEN MSG MSG CNODE INDICATE CURRENT NODE CPU
ASSIGN MSG CP
COMPARE MSG CNODE EQ IS MSG AT DESTINATION?
MSG TNODE EXIT
ASSIGN CP CP NETINSTR
M OVHD
TEST CP CP EXIT
ALLOC CP CP
CONSTANT
DEALLOC CP CP -1
RESET CP CP
ENTRY END
END

LOCAL VARIABLES OF PROCESS ROUTER
=====
1 MSG
5 CONSTANT (X) 2 CP 3 M_OVHD 4
=====

PROCESS
=====
MNEMONIC DESCRIPTION
=====
TOHOST1
=====

ENTRY OPCODE PARM PARM PARM COMMENT
=====
START ALL NO
CALL REQ_I_0 WAIT 0 INITIATE I/O REQUEST
GIVEN T01 PRI SNOWAIT
36 RES1 ITEM2
END

LOCAL VARIABLES OF PROCESS TOHOST1
=====
1 REQ_I_0 (P) 2 T01 3 PRI 4 RES1 (R)
5 ITEM2 (1)
=====

LOAD DEFINITION.....

LOAD
MNEMONIC DESCRIPTION
=====
LOAD1 LOAD NODES LOAD FOR MODEL RUN
=====
RES1
=====

```

PAGE 7

PROCESS	SCHEDULE	MEAN	DELTA	UNITS	PRIORITY
WNEMONIC	METHOD			SECONDS	0
INIT1	START			SECONDS	0
INIT2	START			SECONDS	0
IOHOST1	START			SECONDS	0

SCENARIO DEFINITION....

SCENARIO	DESCRIPTION
WNEMONIC	
PSCEN	SCENARIO FOR TEST RUN
PERIOD	OUTPUT
LENGTH	UNITS
100	SECONDS
PERIOD	PERIOD
WNEMONIC	WNEMONIC
1	1
TRIGGER	TIME TO SCHEDULE
WNEMONIC	SCHEDULE TRIGGER
LOAD1	TIME TO SCHEDULE
0	0

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

APPENDIX E

Model Description and
Results Verification for

TESTDB2.DBF

***** S I M U L A T I O N R E P O R T *****
***** AISIM VERSION 5.0 *****
***** HUGHES AIRCRAFT COMPANY *****
***** 05/15/87 *****

04/22/1987 18:10:06

TEST082

CASE 1 DATA

GLOBAL CONSTANT DEFINITION.....

CONSTANT INITIAL	COMMENT
WNEUMONIC VALUE	

FILE DEFINITION.....

FILE	COMMENT
WNEUMONIC	
TESTIN	INPUT FILE FROM WHICH VALUES ARE READ
TESTOUT	OUTPUT FILE TO RECEIVE VALUES

TABLE DEFINITION....

GLOBAL VARIABLE DEFINITION.....

VARIABLE INITIAL	COMMENT
WNEUMONIC VALUE	
V_OVHD 0	OVERHEAD FOR PROCESSING

ITEM DEFINITION.....

ITEM	DESCRIPTION

```
=====
PAGE      2
MSG
=====
ITEM MESSAGE
=====
ATTR.      INITIAL
NAME       VALUE
=====
LENGTH     0
=====
```

QUEUE	MAXIMUM	COMMENT
WNEUMONIC	SIZE	

RESOURCE DEFINITION.....		
RESOURCE	TOTAL	INITIAL
WNEUMONIC	# UNITS	# UNITS
CPU1	1	1
		RESOURCE CPU1

ATTR.	INITIAL
NAME	VALUE
=====	=====
SPEED	0

CPU2	1	ATTR.	1	INITIAL	RESOURCE	CPU2
		NAME		VALUE		
	=====			=====		
	SPEED		0			

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

ACTION DEFINITION.....	
ACTION	COMMENT
MNEEMONIC	
WORK	RECORD PROCESSING DELAY TIME

PROCESS DEFINITION.....	
PROCESS	DESCRIPTION
WNEWONIC	

PAGE 3 INITIALIZE SYSTEM

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  READ    ALL   NO    NO    READ CASE NUMBER
      READ    CASE  EFLABL  EFLABL  READ CPU TO BE USED
      READ    CPU   EFLABL  EFLABL  READ SPEED OF CPU
      READ    CPU   EFLABL  EFLABL  INITIATE MESSAGE
      CREATE  MSG   EFLABL  EFLABL  READ MESSAGE LENGTH
      READ    MSG   EFLABL  EFLABL  BRANCH BASED ON CASE
      COMPARE CASE 1  EQ CASE1
      COMPARE CASE 2  EQ CASE2
      BRANCH  END    100
      ENTRY  PROC1   NOWAIT 0      CALL PROCESS 1
      CALL   CPU    MSG 100
      BRANCH END
      ENTRY  PROC2   NOWAIT 0      CALL PROCESS 2
      CALL   CPU    MSG 100
      BRANCH END
      ENTRY  END
      EFLABL END

```

LOCAL VARIABLES OF PROCESS INIT1

```

=====
1 CASE 2 CPU 3 MSG (1) 4 PROC1 (P)
5 PROC2 (P)
PROCESS DESCRIPTION
=====
PROC1 PROCESS CASE1
=====

```

```

ENTRY  OPCODE  PARM  PARM  PARM  COMMENT
=====
START  READ    ALL   NO    NO    WRITE ALPHA
      GIVEN  L CPU  L MSG  WRITE PROCESS NAME
      WRITE $TEST1
      WRITE TESTOUT

```

PAGE 4

```

PROC1
TESTOUT
L_CPU
WRITE CPU NAME
WRITE MESSAGE NAME
TESTOUT
L_MSG
READ OVERHEAD VALUE
TESTIN EOFFLABL
V_OVHD
EVAL DELAY
CALCULATE DELAY TIME
V_OVHD + L_MSG[LENGTH] *
L_CPU[SPEED]
WRITE DELAY TIME
TESTOUT
DELAY
L_CPU 1 ALL
ALLOC $PRIORITY
WORK CONSTANT DELAY
SECONDS RESUME
DEALLOC L_CPU 1
EOFFLABL ENTRY
END

```

```

LOCAL VARIABLES OF PROCESS PROC1
=====
1 L_CPU 2 L_MSG 3 PROC1 (P) 4 DELAY
5 WORK (A)
=====

```

```

GLOBAL VARIABLES OF PROCESS PROC1
=====
1 V_OVHD
=====

```

```

PROCESS-
ANEMONIC
=====
DESCRIPTION
=====
PROCESS CASE2
=====

```

ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
START	ALL	NO			
GIVEN	L_CPU	L_MSG			WRITE ALPHA
WRITE	TESTOUT				WRITE PROCESS NAME
	\$TEST2				WRITE CPU NAME
WRITE	TESTOUT				WRITE MESSAGE NAME
	PROC2				READ OVERHEAD VALUE
WRITE	TESTOUT				CALCULATE DELAY TIME
	L_CPU				
WRITE	TESTOUT				
	L_MSG				
READ	TESTIN	EOFFLABL			
	V_OVHD				
EVAL	DELAY				

PAGE 5

```
V_OVHD * L_MSG[LENGTH] *  
L_CPU[SPEED]  
WRITE TESTOUT WRITE DELAY TIME  
DELAY L_CPU 1 ALL ALLOCATE CPU  
$PRIORITY DELAY FOR PROCESSING  
CONSTANT DELAY  
SECONDS RESUME  
L_CPU 1  
DEALLOC  
ENTRY  
END
```

```
LOCAL VARIABLES OF PROCESS PROC2  
===== 3 PROC2 (P) 4 DELAY  
1 L_CPU 2 L_MSG  
5 WORK (A)
```

```
GLOBAL VARIABLES OF PROCESS PROC2  
===== 1 V_OVHD
```

LOAD DEFINITION.....

SCENARIO DEFINITION....

```
SCENARIO  
MNEMONIC DESCRIPTION  
=====
```

TEST1

```
PERIOD PERIOD OUTPUT  
LENGTH UNITS UNITS  
===== 1  
100 SECONDS SECONDS  
PERIOD PERIOD PERIOD PERIOD PERIOD PERIOD  
MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC MNEMONIC  
=====
```

```
TRIGGER TIME TO SCHEDULE SCHEDULE TRIGGER TIME TO SCHEDULE SCHEDULE  
MNEMONIC SCHEDULE UNITS PRIORITY MNEMONIC SCHEDULE UNITS PRIORITY  
===== 0 SECONDS 0  
INITI 0 SECONDS 0
```

0 ERRORS WERE DETECTED DURING MODEL INITIALIZATION

PAGE 6

04/22/1987 18:10:14

TEST082

CASE 1 DATA

PAGE 7

STIMULATION TIME = 100.00000 SECONDS

VARIABLE REPORT

NUMERIC VARIABLES...

			--VALUE--		
	TOTAL		STD DEV...	MINIMUM...	MAXIMUM...
VARIABLE SAMPLES	CURRENT...	MEAN...			
V_OVHD	2	2.000	1.000	0.	2.000

NON-NUMERIC VARIABLES...

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

SIMULATION TIME = 100.00000 SECONDS

ITEM NAME	NUMBER CREATED	NUMBER DESTR'D	TIME IN SYSTEM				STD DEV...
			MINIMUM..	MAXIMUM..	AVERAGE		
MSG	1	0	0.	0.	0.	0.	0.

2

PAGE 9

SIMULATION TIME = 100.00000 SECONDS

RESOURCE REPORT

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CPU1						
# IDLE		1.000	0.480	0.500	0.	1.000
REQUEST TIME						
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	1					
OUT OF BUSY	1					
# BUSY		0.	0.520	0.500	0.	1.000
BUSY TIME			52.000	0.	52.000	52.000
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	1					
OUT OF WAIT	1					
# WAITING		0.	0.	0.	0.	0.
WAIT TIME			0.	0.	0.	0.

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

RESOURCE	TOTAL NUMBER	CURRENT	MEAN	STD DEV	MINIMUM	MAXIMUM
CPU2						
# IDLE		1.000	1.000	0.	1.000	1.000
REQUEST TIME						
HOLD TIME	0		0.	0.	0.	0.
INTO BUSY	0					
OUT OF BUSY	0					
# BUSY		0.	0.	0.	0.	0.
BUSY TIME			0.	0.	0.	0.
# INACTIVE		0.	0.	0.	0.	0.
INTO WAIT	0					
OUT OF WAIT	0					
# WAITING		0.	0.	0.	0.	0.

PAGE 10 WAIT TIME

CURRENTLY ALLOCATED
TO PROCESSES: NONE

PROCESSES CURRENTLY
WAITING: NONE

0. 0. 0. 0. 0.

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SIMULATION TIME = 100.00000 SECONDS

ACTION REPORT

ACTION	TOTAL SAMPLES	MEAN.....	STD DEV...	MINIMUM..	MAXIMUM...	% TIME OF TOTAL
WORK						
USEFUL TIME	1	52.000	0.	52.000	52.000	52.000
DELAY TIME	1	0.	0.	0.	0.	
WASTED TIME	0	0.	0.	0.	0.	

SIMULATION TIME = 100.00000 SECONDS

PROCESS REPORT

```

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

```

```

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

```

```

ITEM          CREATED RECEIVED SENT DESTR'D
=====
MSG          1 0 0 0
=====

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN, MINIMUM, MAXIMUM, STD DEV...
=====
MSG          1 0.          0.          0.          0.
=====

```

```

PROCESS          DESCRIPTION
=====
INIT1
COUNT ENTRY  OPCODE PARM PARM PARM PARM COMMENT
=====
1 1 START ALL NO NO READ CASE NUMBER
1 1 READ TESTIN EOF LABL READ CPU TO BE USED
1 1 READ TESTIN EOF LABL READ SPEED OF CPU
1 1 READ TESTIN EOF LABL INITIATE MESSAGE
1 1 CREATE MSG MSG SPEED READ MESSAGE LENGTH
1 1 READ TESTIN EOF LABL BRANCH BASED ON CASE
1 1 COMPARE CASE EQ CASE1
1 1 COMPARE CASE EQ CASE2
0 0 COMPARE CASE EQ CASE2
0 0 BRANCH END 100
1 CASE1 ENTRY
=====

```

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```

1 CALL PROC1 NOWAIT 0 CALL PROCESS 1
1 CPU MSG
1 BRANCH END
0 CASE2
0 CALL PROC2 NOWAIT 0 CALL PROCESS 2
0 CPU MSG
0 BRANCH END
1 END
1 EOLABL
1 END

```

```

TOTAL
PROCESS SAMPLES. SUM. .... MEAN. .... STD DEV. ... MINIMUM. ... MAXIMUM. ...
=====
PROC1 TOTAL 1 52.000 52.000 0. 52.000 52.000
PROCESS WAIT 0 0. 0. 0. 0. 0.
RESOURCE WAIT 1 0. 0. 0. 0. 0.

```

```

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

```

```

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

```

```

PROCESS HOLDING TIME
ITEM # SMPLS MEAN. .... MINIMUM. ... MAXIMUM. ... STD DEV. ...
=====
MSG 0 0. 0. 0. 0.

```

```

PROCESS DESCRIPTION
=====
PROCESS CASE1

```

COUNT	ENTRY	OPCODE	PARM	PARM	PARM	COMMENT
1	START	ALL	NO			
1	GIVEN	L_CPU	L_MSG			WRITE ALPHA
1	WRITE	TESTOUT				WRITE PROCESS NAME
1	WRITE	TEST1				WRITE CPU NAME
1	WRITE	PROC1				WRITE MESSAGE NAME
1	WRITE	TESTOUT				
1	WRITE	L_CPU				
1	WRITE	TESTOUT				
1	WRITE	L_MSG				

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```

1 READ TESTIN EOFBLBL READ OVERHEAD VALUE
1 V OVHD
1 EVAL DELAY CALCULATE DELAY TIME
1 V OVHD + L MSG[LENGTH] *
1 L_CPU[SPEED]
1 WRITE TESTOUT WRITE DELAY TIME
1 DELAY
1 L CPU 1 ALL ALLOCATE CPU
1 $PRIORITY DELAY FOR PROCESSING
1 WORK CONSTANT RESUME
1 SECONDS L_CPU 1 RELEASE CPU
1 DEALLOC
1 ENTRY
1 EOFBLBL
1 END

```

```

TOTAL
SAMPLES. SUM..... MEAN..... STD DEV... MINIMUM... MAXIMUM...
=====
PROCESS
PROC2
TOTAL 0 0. 0. 0. 0.
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 COMPLETE SUSPEND.
=====
0 0 0 0 0 0

```

```

PROCESS DESCRIPTION
=====
PROCESS CASE2
COUNT ENTRY OPCODE PARM PARM PARM COMMENT
=====
0 START ALL NO
0 GIVEN L_CPU L_MSG WRITE ALPHA
0 TESTOUT $TEST2 WRITE PROCESS NAME
0 WRITE TESTOUT PROC2 WRITE CPU NAME
0 WRITE TESTOUT L_CPU WRITE MESSAGE NAME
0 WRITE TESTOUT L_MSG READ OVERHEAD VALUE
0 READ TESTIN EOFBLBL CALCULATE DELAY TIME
0 EVAL V OVHD + L MSG[LENGTH] *
0 L_CPU[SPEED]

```


END

DATE

FILMED

MARCH

1988

DTIC