January 15, 1999
Ref. No.: EOS/ETS-0199-034

National Aeronautics and
Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Attention: Mr. Willie Fuller
Code 581
Building 32, Room S212D

Subject: Contract No.: NAS9-98100
GSFC SODA Task Number G936 (D3)
EOSDIS Test System (ETS) Multimode Portable Simulator (MPS)
Delivery of the Release 1.6.0 Software

Dear Mr. Fuller:

We are pleased to deliver Release 1.6.0 of the ETS Multimode Portable Simulator (MPS). MPS Release 1.6.0 resolves five Discrepancy Reports (DRs) and implements one ETS Change Request (CR), which was approved by the ETS Discrepancy Review Board. The list of resolved DRs is included as Attachment E, and the implemented CR is identified in Attachment G. The MPS User's Guide is being updated for Release 1.6.0. A copy will be delivered to you next month, and as always, we will plan to make it available from the ETS homepage.

As an unplanned activity, we have conducted Year 2000 (Y2K) testing on this release, knowing that element compliance is very important to EOSDIS Mission Systems. The list of the Y2K test dates used for Y2K compliance testing of the MPS is included as Attachment M. MPS Release 1.6.0 has been tested with Project Data Base (PDB) 20.

This delivery package contains 13 attachments as listed below. A completed Mission Systems Configuration Management (MSCM) form is included in Attachment L. If you have any questions concerning this delivery, please call me at 301-805-3653.

Sincerely yours,

Estelle S. Noone
CSOC ETS Project Manager

Delivery Package Reviewed and Approved by:

Janice Swope
CSOC Simulations Group Manager

The following attachments contain the details of the MPS software.

Attachment A - describes the delivery contents for this release
Attachment B - describes the operational changes
Attachment C - contains the instructions to build and install the software
Attachment D - contains any special operating instructions
Attachment E - contains a list of the resolved DRs
Attachment F - contains a list of the unresolved DRs
Attachment G - contains the matrix of requirements addressed by this release
Attachment H - contains the known system limitations
Attachment I - contains the release history summary matrix
Attachment J - contains a listing of the delivery media contents
Attachment K - contains documentation references
Attachment L - contains the Mission Systems Configuration Management (MSCM) form
Attachment M - contains a list of tested and verified Y2K test dates

Distribution: (* - Letter Only)

NASA	ATSC	Lockheed Martin	CSC
Ondrus, P. *	Bradbury, T. *	Cordier, G	Abshire, G. *
Johns, A. *			Crowley, A. *
Kelly, A.	Unisys		Moore, G.
ESDIS Library			Noone, E.
	S. Thompson		Onwukwe, G.
			Parlock, W.
			Quintin, E.
			Swope, J
			Task File

Attachment A - Description of Delivery Contents

The Multimode Portable Simulator Release 1.6.0 consists of custom software and is being delivered via seven 3.5” IBM PC compatible diskettes. Two copies of the media are being delivered.

A soft copy of the MPS Release 1.6.0 delivery package attachments is being delivered. The attachments have been formatted on a 3.5" IBM PC diskette utilizing the MS WORD version 97 word processing tool.

Attachment B — Operational Changes for Release 1.6.0

1. As an option, the MPS simulates playback data by reading a user supplied file into the telemetry stream. The data is transmitted as it appears in the file; no fields are changed by the MPS. Using this MPS playback feature, simulated spacecraft solid state recorder (SSR) playback data can be used with the EDOS Playback Anomaly Recovery System (PARS). PARS is a front-end system to EDOS, which takes the data from the spacecraft and unscrambles the SSR data before passing it into EDOS for return link processing.

   (Background: Due to an onboard anomaly of the SSR, the playback data gets scrambled; the EDOS PARS was the resolution to recover the playback data .)

   The MPS reads data from the file and transmits this user supplied scrambled data. A problem with the MPS interface was identified at higher playback data rates in the previous releases. The minimal playback rate that the PARS system will accept is 256 kbps. Analysis of the MPS showed that disk access while trying to read the file on a real-time basis was too slow. The solution incorporated into this release was to read the file from the hard drive to a section of extended memory, called DRAM, to allow for the higher transmission rate.

   The procedure for reading in playback data is the same as reading in a housekeeping file. The user selects HK File as the Data Source, enters the file name in the Housekeeping File Dialog Box, and clicks on OK. Upon entry of the housekeeping file name, the MPS will echo a status associated with that file. If the file cannot be opened, an error message will be displayed. If the file selection is valid, messages indicating the file is being read into DRAM, and that file read is complete, will be displayed. A large file will take less than a minute to load. Wait for the file to be completely read into DRAM before starting telemetry. Remember:

   - Files can only be transmitted on the Q channel.
   - The data format selected must be housekeeping.
   - The playback data may be read and transmitted in spacecraft mode only.
   - The user can specify the data transmission rate.

2. With this release (and the previous Engineering Release 1.5.0.b), the PDB Translator is changed back to being only one executable file. The invocation method is unchanged from previous releases.

Attachment C — MPS Release 1.6.0 Build Instructions

Since the MPS GUI is not being redelivered with this release, the paragraphs dealing with the VME187 software compilation and setup have been omitted.

C1. MVME177 SW:

a) Create the following source file directories on the PC:
gt_dir, ds_dir, sm_dir, to_dir, inc, xt_dir, ty_dir, ad_dir, op_dir, mc_dir, di_dir, ti_dir, sc_dir, ci_dir, ut_dir, mt_dir, network, in_dir, mo_dir, mdb_gen, pdb_gen, ae_dir, dcu_cvt, scn_cvt

b) Copy all source files from 3.5" floppys (disk1, disk2 and disk3) to their corresponding directories on the PC. Make sure all the files (header, etc.) are copied from the floppies.

c) Edit the CC.BAT file that is found in the C:\PDOS\BIN directory of the PC to point to the newly created "inc" directory.

d) All source files must be compiled and linked. Each directory has its own compile batch file and link file as shown in the table below. The link operation creates an executable with a name like *link_yy.sy*, where *yy* is the two character task identifier. It must be renamed as *xyy*, as indicated in column four of the table. **Compile the contents of *ut_dir* first**.

Example: in the "gt_dir" directory, first compile all the source files by typing "comp_gt". Next, link the files by typing "link link_gt". An executable named "link_gt.sy" will be created. Rename it to "xgt". **Do not rename the four executables in the *network* directory.**

The contents of mdb_gen are the offline Modeling Database Translator. The pdb_gen directory contains the offline Project Data Base (PDB) Translator. dcu_cvt contains the EU to Raw Data Conversion utility. And scn_cvt contains the Scenario File Converter. The four executables get renamed according to the directions given below.

directory	compile batch file	link file(s)	executable
ut_dir	comp_ut	(no link file)	
gt_dir	comp_gt	link_gt	xgt
ds_dir	comp_ds	link_ds	xds
sm_dir	comp_sm	link_sm	xsm
to_dir	comp_to	link_to	xto
xt_dir	comp_xt	link_xt	xxt
ty_dir	comp_ty	link_ty	xty
ad_dir	comp_ad	link_ad	xad
op_dir	comp_op	link_op	xop
mc_dir	comp_mc	link_mc	xmc
di_dir	comp_di	link_di	xdi
ti_dir	comp_ti	link_ti	xti
sc_dir	comp_sc	link_sc	xsc
ci_dir	comp_ci	link_ci	xci
mt_dir	comp_mt	link_mt	xmt
in_dir	comp_in	link_in	xin
mo_dir	comp_mo	link_mo	xmo
ae_dir	comp_ae	link_ae	xae
network	comp_net	udpt1	udpt1.sy†
		udpt2	udpt2.sy†
		send	send.sy†
		momdsim	momdsim.sy†
pdb_gen	comp_pdb	link_pdb	xpdb §
mdb_gen	comp_mdb	link_mdb	xmdb §
dcu_cvt	comp_dcu	link_dcu	xdcu §
scn_cvt	comp_scn	link_scn	xscn §

e) Create, on the VME, a directory structure like the following example, where [root] is the base directory. It may be a subdirectory itself. This directory structure most likely exists from the previous release. If so, augment it with the subdirectories shown. The PDB20 subdirectory must contain all of the files that were in previous PDB directories, with the exception that the *.pdb files are replaced by identically named files from the identified version of the PDB and the network configuration files are now in the NETWORK subdirectory.

```
[root]      /ACPT
            /PDB20
            /DATABASE      /ver_20
            /NETWORK
```

The “DATABASE” directory will contain the executables for the PDB Translator, the Modeling Database Translator, the EU to Raw Data Conversion utility, and the Scenario File Converter. The “ver_20” subdirectory will contain the PDB source files and the modeling database source files. Explicit directions for setting up this directory are given below.

f) All executable files must be renamed and brought over to the VME using FTP in binary mode. Rename and copy the **.sy* files (created in each directory in step d) to the VME [root]/ACPT directory according to the "executable" column above (except **xdcu, xscn, xmdb,** and **xpdb**, which are marked with **"§"**. These four executables are treated differently according to directions given below.) **NOTE: The four network files marked with "†" are copied without being renamed.**

g) The remaining VME files are supplied on 3.5" floppy diskettes. The files on the diskettes are copied to the VME as per the following instructions.

h) Diskette 4 has the following directory structure:

<root>	\BLD1_6	\ACPT
		\DATABASE
		\NETWORK

The <root> directory contains a single file, pkunzip.exe, which is supplied to ensure that unzip operations work correctly.

In the following substeps be sure to set the FTP utility to the correct mode (binary or ASCII, as indicated).

The BLD1_6 directory contains the files RUN_MPS and CLEAR. Use FTP in ASCII mode to copy these files to the [root] directory on the VME, if they are not already present.

The BLD1_6\ACPT subdirectory contains copies of all the executables as well as *ac.bkp*. Use FTP in ASCII mode to copy the *ac.bkp* file to the [root]/ACPT directory of the VME. If ever the system is not built directly from the delivered source code, use FTP in binary to copy the executables to the [root]/ACPT directory of the VME.

The BLD1_6\DATABASE directory contains copies of the executables for **xpdb**, **xmdb, xdcu,** and **xscn** . If these utilities are not being built from the delivered source code, copy them to the DATABASE subdirectory on the VME, using FTP in binary.

The BLD1_6\NETWORK directory contains the network configuration files. These contain the IP addresses and port numbers needed by the MPS. Copy all files to the [root]/NETWORK directory of the VME, using FTP in ASCII mode.

i) Diskette 5 contains a ZIP file with several data files necessary for operation of the MPS. The PDB20.ZIP file contains the translated Version 20 PDB files, the Modeling Database files, and contig.ac. Unzip PDB20.ZIP then use FTP in binary mode to copy the files to the [root]/PDB20 directory of the VME.

j) Using binary mode FTP, copy the xmdb, xdcu, xscn, and xpdb executable images created in step d to the DATABASE directory, renaming them from **link_mdb.sy** to **xmdb,** from **link_pdb.sy** to **xpdb**, etc., respectively.

k) Before the utilities, **xmdb, xpdb**, etc. can be run, their executable attribute bit must be set. The commands to do this are:

```
cd  [root]/DATABASE
sa   xpdb, sy
sa   xmdb, sy
sa   xdcu, sy
sa   xscn, sy
```

l) Diskettes 6 and 7 contain a single ZIP file, PDB20SRC.ZIP, spanning the two diskettes, which contains all of the Project Data Base (PDB) source files. Use PKUNZIP to explode this file onto the PC's hard drive. The following commands are suggested:

```
c:
cd \[root]\DATABASE\ver_20
\ZIP\PKUNZIP  -e  A:\PDB20SRC
```

m) Before starting pkunzip, place diskette 6 into the floppy A drive. As it runs, pkunzip will give instructions for inserting and removing the diskettes.

n) Next, use FTP in ASCII mode to copy the PDB 20 source files needed by the PDB Translator to the [root]/DATABASE/ver_20 directory of the VME. The filenames must be in lower case on the VME.

The names of the PDB source files became truncated when the files were ported to the PC. Use the following table as a guide in renaming PDB source files in the DATABASE/ver_xx directory, where xxx is the PDB version number. Use the PDOS 'rn' command. Case is important.

cmd_parm.pdb	cmd_parm_xxx.PDB
cmd_fixd.pdb	cmd_fixdata_xxx.PDB
cmd_vard.pdb	cmd_vardata_xxx.PDB
cmd_veri.pdb	cmd_verify_xxx.PDB
tlm_parm.pdb	tlm_parm_xxx.PDB
tlm_dsta.pdb	tlm_dstate_xxx.PDB
tlm_ryli.pdb	tlm_rylim_xxx.PDB
tlm_poly.pdb	tlm_polyconv_xxx.PDB
tlm_calc.pdb	tlm_calcurve_xxx.PDB

o) After the copy operations are complete many of the files may need to have their file type attribute changed from "SY" to "AC". The commands to do this are:

```
10:
cd [root]
sa RUN_MPS,ac
sa CLEAR,ac

cd ACPT
sa ac.bkp,ac

 cd  ../PDB20
sa  contig.ac,ac
```

p) When FTP is used to copy translated PDB files, the files may become non-contiguous on the disk. While non-contiguous files will work perfectly well, the time needed for MPS bootup can lengthen

considerably. Enter the following at the VME177 console to make the PDB input files contiguous:

```
cd [root]/PDB20
contig.ac
```

Attachment D — Special Operating Instructions

There are no special operating instructions for the MPS Release 1.6.0. Standard operating procedures are included in the User's Guide for the ETS Multimode Portable Simulator, to which minor updates are being made for this release. The current version (for Release 1.5.0) is available through the ETS home page at http://esdis-it.gsfc.nasa.gov/ets/etsdoc.html. The updated MPS User's Guide will be available from the same location in mid-February.

Attachment E — Resolved Discrepancy Reports

Attachment E reflects the closed DRs that were delivered with MPS Release 1.6.0. Also included is a detailed description of each resolved DR. Complete information on all DRs can be accessed via the Internet at address http://iree.gsfc.nasa.gov/ddts/ (directly) or from the ESDIS Integration and Test home page at http://esdis-it.gsfc.nasa.gov/integ/integ.html.

Summary of Closed Discrepancy Reports

Critical(1)	Urgent(2)	Routine(3)	Total
0	**0**	**5**	**5**

Status Definitions

N - New	A - Assigned Analysis	R - Assigned Resolution
D - Delivered	V - Verified	C - Closed
W - Withdrawn	P - Postponed	X - Duplicate

DR #	Status	Sev	Subsystem	Description	Related NCR
ETS0307	C	3	MPS	Incorrect initial values for FS1_SS_ELENC and FS2_SS_ELENC	
ETS0309	C	3	MPS	MPS Packet Header Timestamps Do Not Match Spacecraft	
ETS0310	C	3	MPS	Packet Count rollover messes up S/C Time	
ETS0311	C	3	MPS	MPS Ground Message Header time is one day in the past	
ETS0313	C	3	MPS	Incorrect Delta Time Between Packets	

DR: ETS0307 **Related NCR:** **Submitted: 980413**

Status: CLOSED **Class: ETS** **Closed: 990112**

Title: Incorrect initial values for FS1_SS_ELENC and FS2_SS_ELENC

********** Problem (Added 980413 by enoone) **********

Received copy of FOS event log showing that some MPS telemetry parameters still exhibit limit violations. Examination of the log and duplication of values by hand calculation revealed that the PDB Translator is calculating incorrect values for some (but not all) telemetry parameters that are flagged as being in error.

Analysis revealed that the MPS PDB Translator is using a scale factor incorrectly, which results in incorrect initial values for parameters such as FS1_SS_ELENC and FS2_SS_ELENC.

For most parameters in violation, however, the analysis revealed that the PDB files received from the FOS have errors and inconsistencies in their conversion equations that are resulting in the bad initial values.

********** Analysis (Added 980424 by enoone) **********

Examination of PDB Translator code revealed that conversion scale factors were being applied incorrectly. Two units were changed: md_cvtrw.c and md_peu2r.c. These units are used by the Scenario File Converter, the EU to Raw Data Converter, and the Modeling Database Generator, as well as the PDB Translator, which are all offline MPS utilities.

This fix is being provided as an engineering patch release because there is not another scheduled release; it is not an emergency release. The effect of this change is to remove 2 of the 12 telemetry parameters causing limit violations as seen in the FOS event logs generated when they receive MPS telemetry data. The other 10 require changes to the FOS software or PDB. This DR and associated fix resulted from a review of a FOS log file created to assess closure for CR-19980209-04.

********** Analysis (Enclosure added 981218 by enoone) **********

Software officially delivered on Dec 11, 1998 as part of MPS Release 1.6.0

DR: ETS0309 **Related NCR:** **Submitted: 980604**

Status: CLOSED **Class: ETS** **Closed: 990112**

Title: MPS Packet Header Timestamps Do Not Match Spacecraft

********** Problem (Added 980604 by enoone) **********

The FOS Analysis IPT lead, Charlie Bengston, reported that during a review of test results it became apparent that the MPS packet headers contain spacecraft time on even 1-second intervals rather than on 1.024-second intervals as correctly produced by the spacecraft and SSIM.

********** Analysis (Added 981218 by enoone) **********

Modified the timestamp calculation to increase the granularity. Units changed: pub_xt.h, to_main.c, to_rtstr.c, to.h, xt_main.c, tq_rtstr.c, xt.h, and ty_rate.c

DR: ETS0310 **Related NCR:** **Submitted: 980716**

Status: CLOSED **Class: ETS** **Closed: 990112**

Title: Packet Count rollover messes up S/C Time

********** Problem (Added 980716 by enoone) **********

When MPS is operating in the EDOS simulation mode and it is left running transmitting telemetry for a number of days, the packet count reaches its maximum for the field and rolls over to zero. This is correct. However, when this happens, the spacecraft time in the Ground Message Header incorrectly goes to year 58, day 1.

********** Analysis (Added 981218 by enoone) **********

Have not been able to recreate the problem. However, the ETS0309 fix has resulted in a new way of calculating spacecraft time for packet headers. It is believed that this has made the DR ETS0310 problem go away.

DR: ETS0311 **Related NCR:** **Submitted: 980716**

Status: CLOSED **Class: ETS** **Closed: 990112**

Title: MPS Ground Message Header time is one day in the past

********** Problem (Added 980716 by enoone) **********

The time field in the Ground Message Header (GMH) of EDUs transmitted by MPS when in the EDOS simulation mode is exactly one day (24 hours) in the past.

This problem was reported by both Robert Messerly and Tim Lewis.

********** Analysis (Added 981218 by enoone) **********

Adjusted the constant used to calculate Ground Message Header time from the epoch date. Units changed: ti_pb5c.c.

DR: ETS0313 **Related NCR:** **Submitted: 981201**

Status: CLOSED **Class: ETS** **Closed: 990112**

Title: Incorrect Delta Time Between Packets

********** Problem (Added 981201 by mhilliard) **********

During ICT-11 Test on October 14, EDOS requested MPS to send 1kbps housekeeping data on both the I and Q channels. During analysis, it was found that the delta time between packets was incorrectly being generated by MPS. The packet time was updating every 1.024 seconds instead of 2.048 seconds.

********** Analysis (Added 981218 by enoone) **********

Adjusted the time calculation to account for the transmission time of HS VCDUs.

Units changed: to_main.c, to_rtstr.c, tq_rtstr.c

Attachment F - Unresolved Discrepancy Reports (DR)

MPS Release 1.6.0 test verification generated one new Internal Discrepancy Report (IDR), which has been converted to a Discrepancy Report (DR). The IDR was written on a problem found during MPS Year 2000 testing; the error is not specifically a Y2K problem, but applies to any year-end rollover condition in the MPS stored command processing simulation. The DR has been entered for the ETS Project into the ESDIS Discrepancy Report Tracking Tool (DRTT).

Unresolved ETS DRs from all releases are described in the DRTT. Complete information on all DRs can be accessed via the Internet at address http://iree.gsfc.nasa.gov/dtts/ (directly) or from the ESDIS Integration and Test home page at http://esdis.gsfc.nasa.gov/integ/integ.html. The following tables represent a summary of the open DRs. The unresolved DRs are listed in the table below by Number, Status, Severity, System/Subsystem name, Description, and Related NCR number. A full description of each DR follows the summary tables.

Summary of Open Discrepancy Reports

Release	Critical(1)	Urgent(2)	Routine(3)	Totals
Prior Releases	0	0	2	2
New in 1.6.0	0	0	1	1
Totals	0	0	3	3

Status Definitions

N - New	A - Assigned Analysis	R - Assigned Resolution
D - Delivered	V - Verified	C - Closed
W - Withdrawn	P - Postponed	X - Duplicate

DR #	Status	Sev	Subsystem	Description	Related NCR
ETS0306	A	3	MPS	Inconsistent timestamps	ETSdev0029
ETS0314	A	2	MPS	Uncorrectable RS errors Generated	
ETS0315	A	3	MPS	Stored Command Inputs to MPS utilizing NAT [test tool] not processing Millenium Roll	ETSdev0034

DR: ETS0306 **Related NCR: ETSdev0029** **Submitted: 980327**

Status: ASSIGNED-ANALYSIS **Class: ETS** **Asgnd-Analysis: 980401**

Title: Inconsistent timestamps

********** Problem (Added 980327 by enoone) **********

During system startup, the Spacecraft and UTC times are initialized, and then freeze while other startup tasks take place. This results in the Spacecraft and UTC times being about 40 seconds behind the time in the event log.

DR: ETS0314 **Related NCR:** **Submitted: 981201**

Status: ASSIGNED-ANALYSIS **Class: ETS** **Asgnd-Analysis: 981211**

Title: Uncorrectable RS errors Generated

********** Problem (Added 981201 by mhilliard) **********

During ICT-11 Test on October 14-16, EDOS began receiving some uncorrectable RS errors from data sent from MPS-1. The MPS software was stopped and restarted and the data quality was good. This occurred a few times throughout the test.

********** Analysis (Added 990115 by enoone) **********

Extensive testing was performed in response to the DR, which noted that occasional Reed Solomon errors were observed when using the MPS during the ICT test. The follow-up trouble-shooting test configuration included the STPS to monitor the Reed Solomon errors in transmitted MPS data. The anomaly was eventually reproduced by repeatedly starting and stopping telemetry while simultaneously changing data rates on the MPS. The source of the anomaly could not be traced by the MPS developers to an obvious software problem. The anomaly could be eliminated by stopping and restarting telemetry whenever the Reed Solomon errors were observed. This could be accomplished by using the MPS user interface, or by disconnecting and reconnecting hardware cables to the matrix switch. There was discussion of the possibility of a clock and data phase issue. Better test tools are needed to help isolate and resolve the problem.

DR: ETS0315 **Related NCR: ETSdev0035** **Submitted: 990114**

Status: ASSIGNED-ANALYSIS **Class: ETSdev** **Asgnd-Analysis: 990114**

Title: Stored Command Inputs to MPS utilizing NAT not processing Millenium Roll

********** Problem (Added 990114 by gonwukwe) **********

Specifically, we observed during testing that ATC and RCTS commands via NAT (Network Analysis Tool) were not being processed for Millenium Rollover date, i.e day 365, 1999 to day 001, 2000. Commands were processed for other dates within Yr 2000 such as Leap Day of Year 02/28/2000 to 02/29/2000 and 12/29/2000 - 03/01/2000. As a

control test Memory Load Data was run for Julian Day 365, 1997 - Julian Day 001,1998 only 2 commands were received prior to midnight (command inputs were entered at 23:55:00) i.e. the two commands destined for execution prior to midnight other 3 after were not executed. This scenario was true for command inputs for Julian Day 366, 2000 - Julian Day 001,2001 only 2 commands. These were COMMAND COM_SELECT_SBT2_PN66 and COMMAND CDH_TURN_ON_SCCI commands.

Attachment G — List of System Requirements

In MPS Release 1.6.0, one ETS Change Request (CR) was implemented. The ETS Discrepancy Review Board approved this CR for implementation. More detailed information about all ETS CRs and the status of each one may be found at the ETS CR web site, which is currently located at URL: http://esdis/ets/etscr_crr.html.

CR Number	Description	Compliance Full/Partial/None	Comment
19980209 - 16	Need MPS to simulate "nonsynchronized" playback data	F	The MPS does not simulate data reflecting the problem that the AM-1 spacecraft solid state recorder (SSR) has in doing the low rate playback dumps (at 256 and 512 kbps), and as a result, PARS cannot process the clean MPS data. Rather than simulating the SSR anomaly of generating nonsychronized data, the MPS was modified to be able to read a user-provided file of recorded SRR data and to transmit that data without any modification to EDOS through PARS.

Attachment H — Known System Limitations and Suggested Workarounds

1. The maximum supported size of a playback data file is 20 megabytes. See Attachment B, Operational Changes, for more information about the implemented MPS feature to playback user-provided data files.

The following two limitations are carried over from Release 1.5.0 because they are still applicable.

1. Error checking of user input 1750A values is incomplete.

   The error checking software for 1750A data is incomplete and the limit checking is disabled. The user should take care not to enter 1750A parameter values that are larger than 1.7014114e38 nor smaller than -1.4693682e-39. The results of entering larger or smaller values are indeterminate.

2. Enhancements to the command decoding logic have increased the fidelity of the simulator. The MPS now takes into account the values of variable fields within commands when decoding a received command. If a command is rejected by the MPS, the user should examine the command for any of the following conditions.

   a. Ensure that all fixed bit patterns match the patterns given in the cmd_fixdata file of the current PDB. Previous to Release 1.5.0, MPS only checked the Destination and Descriptor words, and data words that had no variable part at all.

   b. Ensure that, if a variable field is restricted to a discrete set of values as defined in the cmd_vardata PDB file, the field does contain either the default value or a value corresponding to one of the states.

   c. Ensure that, if a variable field is restricted to a range of values, the value in the field is within the range given in cmd_vardata.

   Also, the enhancement has revealed a condition in the command recognition logic which would have required some amount of new code to resolve. Specifically, two ASTER commands have been found that will have the same bit pattern in most cases. They are AST_SET_T_MODE1 and AST_MOVE_T_MIRROR. MPS recognizes both commands as AST_MOVE_T_MIRROR. Also, depending upon the contents of variable fields, AST_SET_V_MODE2 will be recognized as AST_SET_V_MODE1. There may be other commands which will be misinterpreted due to this condition.

Attachment I – Release History Summary Matrix

Attached is the release history summary matrix, which reflects the MPS Release 1.6.0 delivery.

Release History Summary Matrix									
SYSTEM:	MPS								
RELEASE NUMBER		1.0	1.1.0	1.2.0	1.2.1	1.3.0	1.4.0	1.5.0	1.6.0
DELIVERY DATE		12/02/96	4/4/97	6/6/97	7/30/97	9/19/97	12/19/97	4/3/98	1/15/99
CONFIGURATION ITEM	CI NO.								
MPS Workstation	1.1	1.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
VME Platform	1.2	1.0	n/a	n/a	n/a	1.3.0	1.4.0	1.5.0	n/a
MPS User Interface	1.3	1.0	1.1.0	1.2.0	n/a	1.3.0	1.4.0	1.5.0	n/a
Spacecraft SIM	1.4	1.0	1.1.0	1.2.0	1.2.1	1.3.0	1.4.0	1.5.0	1.6.0
OMDSIM	1.5	1.0	1.1.0	1.2.0	n/a	1.3.0	1.4.0	1.5.0	n/a
Utilities	1.6	1.0	1.1.0	1.2.0	n/a	1.3.0	1.4.0	1.5.0	1.6.0

Attachment J - Listing of Delivery Contents

MPS Release 1.6.0 MVME177 Source Software (Floppy Disk 1 of 7), 1/15/99

Volume in drive A has no label

Directory of A:\MPS\MVME177\DISK1

GT_DIR	<DIR>	12-03-98	09:44a
DS_DIR	<DIR>	12-03-98	09:44a
SM_DIR	<DIR>	12-03-98	09:44a
TO_DIR	<DIR>	12-03-98	09:44a
INC	<DIR>	12-03-98	09:44a
XT_DIR	<DIR>	12-03-98	09:44a
TY_DIR	<DIR>	12-03-98	09:44a

7 file(s) 0 bytes

Directory of A:\ MPS\MVME177\DISK1\DS_DIR CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
DS_WRIT C	2,156	03-14-97	09:28a
DS_MAIN C	10,397	03-14-97	10:23a
DS_TOPKT H	6,022	07-08-96	03:42p
DS_SMTBL H	5,496	02-16-94	03:51p
MAIN_DS H	1,727	02-17-94	09:25a
DS_STRPK H	7,250	09-01-94	01:40p
DS_STR H	13,711	10-18-94	10:46a
DS_INCS H	793	10-13-95	09:01a
DS_SEG H	6,825	01-15-96	10:29a
DS_SCI H	337	02-08-95	09:10a.
DS_DEF H	4,724	01-15-96	04:25p
DS_INIT H	10,623	01-02-96	02:34p
DS H	1,050	12-30-96	04:45p
COMP_DS BAT	34	11-26-96	05:29p
CF BAT	34	10-08-96	04:40p
LINK_DS CMD	697	11-26-96	05:30p

16 file(s) 71,876 bytes

Directory of A:\ MPS\MVME177\DISK1\GT_DIR CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
GT_INS C	2,628	11-17-94	06:36p
GT_FMT C	2,331	01-18-96	10:53a
GT_TRAV C	1,414	09-13-93	01:36p
GT_EVENT C	2,430	03-20-97	06:18p
GT_FIND C	1,458	01-05-94	11:13a
GT_GAPID C	1,717	01-05-94	11:39a
GT_GNAME C	1,447	01-05-94	11:46a
GT_SAPID C	1,933	07-12-94	05:21p
GT_SNAME C	1,797	07-12-94	05:21p

GT_UPD C	1,569	11-02-94	06:34p
GT_SNVAL C	3,020	11-15-95	02:19p
GT_SAVAL C	2,715	11-15-95	06:09p
GT_ACT C	1,440	12-30-94	12:30p
GT_Q_PKT C	2,783	11-17-94	07:12p
GT_CREAT C	4,836	07-18-96	02:08p
GT_ACSCT C	3,821	07-18-96	02:09p
GT_ACSVL C	1,824	11-17-94	05:59p
GT_ACSEN C	1,668	11-17-94	06:03p
GT_ACSET C	2,595	02-06-95	04:37p
PRT_ACS C	2,066	12-07-94	03:26p
PRT_PKT C	1,930	01-30-94	12:33p
GT_DPPKT C	7,046	06-26-97	01:19p
GT_INTVL C	1,738	08-25-94	12:54p
GT_SEND C	2,695	03-31-95	08:41a
GT_INIT C	1,669	05-13-97	10:08a
GT_MAIN C	3,540	05-13-97	10:07a
GT_PIN C	3,821	04-17-97	10:40a
GT_RESET C	1,296	04-21-97	12:06p
GT_NODMP C	2,250	04-17-97	01:29p
GT_INIT H	1,829	11-15-93	01:19p
GT_STR H	1,352	11-12-93	03:12p
GT_INCS H	635	05-13-97	10:12a
GT_INVNM H	765	12-10-93	05:05p
GT_ACS H	1,095	11-17-94	06:06p
GT_BSTR H	1,712	02-16-96	02:32p
GT H	2,023	03-19-97	09:01a
GT_DEF H	1,388	02-20-97	10:17a
CF BAT	34	04-22-96	10:25a
COMP_GT BAT	189	04-17-97	09:43a
LINK_SC2 CMD	1,480	05-17-96	09:29a
LINK2_SC CMD	1,480	05-17-96	09:30a
LINK_GT CMD	854	04-17-97	09:44a
42 file(s) 86,313 bytes			

Directory of A:\ MPS\MVME177\DISK1\INC CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
OPS_MIDS H	1,208	09-25-95	03:06p
SCDEF H	2,499	02-11-96	12:59p
CMD_MIDS H	4,720	10-13-94	12:50p
IOCONF H	2,096	02-08-93	12:55p
GLOBALS H	1,768	04-26-94	02:00p
DP_PKT H	1,317	08-09-94	04:52p
TLM_MIDS H	4,071	10-14-94	01:37p
MDL_MIDS H	3,549	02-06-95	03:32p
COMPILER H	1,214	10-27-93	03:14p
OPDEF H	4,447	03-24-95	03:32p
WRITE_TI H	766	03-19-94	02:34p
HSIO H	2,777	10-27-93	04:10p
PUB_TI H	2,395	09-23-97	09:36a
FUNC_MC H	775	06-26-96	08:37a
SCSTR H	3,881	04-02-96	08:51a
BASEPSS H	623	09-10-93	02:16p
PTRTB_MT H	746	02-10-97	08:12a

PDBOLD H	14,933	10-13-94	11:41a
PUB_OP H	1,401	04-06-95	12:33p
PSSDEF H	2,858	01-08-99	08:50a
PUB_MT H	2,668	11-17-97	10:38a
INIT_TO H	2,825	12-07-93	02:46p
GADDR_TO H	737	04-14-94	02:26p
PUB_TO H	1,791	10-03-96	02:54p
MPS H	15,127	02-17-98	12:33p
MAIN_TO H	1,715	12-07-93	11:44a
OPSTR H	8,155	01-24-94	12:39p
QGLS_OP H	3,677	01-24-94	12:34p
QOPT_OP H	2,135	01-24-94	12:33p
TBREG_SM H	1,179	08-02-94	05:33p
PUB_MO H	1,562	10-22-96	10:58a
PUB_AE H	709	09-02-94	05:42p
PUB_AC H	999	03-02-95	09:30a
OP_TASK H	1,072	02-21-93	07:01p
PUB_DS H	2,526	12-30-96	03:42p
GLO_DEF H	1,401	04-06-95	01:56p
PUB_AM H	973	03-27-95	03:59p
PUB_PB H	790	04-21-94	02:04p
PUB_AD H	802	03-30-95	01:56p
SP_TIDS H	11,810	10-15-95	12:49p
AP_TIDS H	8,172	11-08-95	04:03p
PUB_ME H	1,027	01-31-95	12:56p
PUB_SC H	1,087	05-08-97	10:21a
MODELSTR H	6,899	10-09-97	05:09p
DS_TOPKT H	5,985	04-25-94	03:07p
SIDS H	19,262	10-12-95	02:40p
MPSPKT H	1,931	06-13-96	01:11p
TO_DEF H	4,016	11-19-98	10:29a
HSIO2 H	2,180	02-20-96	03:04p
SM_PKT H	22,637	10-11-95	05:30p
EDU H	2,214	06-29-96	11:56a
EDGM H	4,931	07-24-96	06:15a
ETS H	2,685	12-05-96	02:58p
FQ2 H	3,942	06-18-96	02:33p
PUB_CI H	2,689	11-25-97	01:21p
PDB H	16,449	03-24-98	03:28p
PUB_GT H	2,190	04-17-97	09:36a
TO_PKT H	4,851	02-20-97	10:47a
PUB_DI H	1,631	06-17-97	11:16a
PUB_SM H	2,320	06-04-97	04:48p
PUB_IN H	789	06-03-97	09:38a
PUB_MC H	1,771	06-06-97	12:31p
PUB_XT H	9,315	11-09-98	11:07a
PDBNOV H	15,322	10-09-97	03:45p
HKFILE H	576	10-23-98	04:47p
65 file(s) 265,568 bytes			

Directory of A:\ MPS\MVME177\DISK1\SM_DIR CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
SM_COPY C	1,381	04-16-97	11:11a
SM_MAIN C	5,115	06-03-97	04:21p

SM_INIT C	8,673	11-03-97	11:29a
SM_SCCLD C	3,314	07-07-97	11:30a
SM_CXSUM C	1,351	09-10-96	07:14a
SM_MLIST C	9,914	09-10-96	07:08a
SM_DIADP C	2,821	10-29-97	04:47p
SM_MCOPY C	4,732	09-10-96	07:13a
SM_DPABO C	3,919	11-03-97	10:15a
SM_SCTBL C	25,331	02-27-97	02:59p
SM_SYTBL C	12,344	02-27-97	02:59p
SM_SCCDP C	3,878	10-29-97	04:46p
SM_SETME C	3,524	07-07-97	11:25a
SM_GNBLK C	2,122	06-05-97	08:47a
SM_LOG C	4,010	02-28-97	08:20a
SM_MEMLD C	3,272	07-07-97	11:06a
SM_MLOAD C	3,575	07-07-97	11:31a
SM_PUTQ C	1,164	06-17-97	11:33a
SM_LDRST C	3,466	06-06-97	12:47p
SM_GNABS C	1,739	07-07-97	11:09a
SM_GNTBL C	1,748	07-07-97	11:10a
SM_CCITT C	2,231	11-05-97	11:47a
SM_BDDMP C	4,375	07-07-97	11:13a
SM_DPRST C	2,153	06-04-97	05:29p
SM_GNSTR C	2,290	06-05-97	08:49a
SM_TDREQ C	4,852	11-03-97	02:32p
SM_CRC C	3,051	11-06-97	09:46a
SM_CERLD C	1,901	05-28-97	10:51a
SM_MDREQ C	4,067	10-30-97	12:01p
SM_GATHR C	3,773	11-03-97	11:35a
SM_LDTBL C	4,051	07-07-97	11:33a
SM_STRCT H	30,686	05-21-97	12:29p
SM_TBL H	6,857	07-07-97	10:55a
SM_SCTBL H	1,019	08-09-94	04:58p
SM_SYTBL H	989	08-09-94	05:01p
SM_INCS H	1,498	03-06-97	01:49p
SM_PROTO H	3,635	05-27-97	01:21p
SM_INIT H	5,427	11-12-97	12:20p
SM H	5,381	11-03-97	11:21a
COMP_SM BAT	1,747	05-23-97	01:44p
CF BAT	34	10-04-96	12:34p
LINK_SM CMD	1,680	05-23-97	01:43p
42 file(s) 199,090 bytes			

Directory of A:\ MPS\MVME177\DISK1\TO_DIR CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
TO_PBSTR C	4,561	02-20-96	03:10p
TO_CWUPD C	1,085	12-07-93	02:37p
TO_INITR C	1,096	12-07-93	02:56p
TO_INLIS C	1,533	10-06-94	03:06p
TO_SETEC C	2,248	07-28-95	05:19p
TO_DPTLM C	1,567	03-11-96	03:51p
TO_TIMEC C	1,022	12-07-93	03:10p
TO_RTSTP C	1,531	02-04-97	01:44p
TO_SETPB C	1,664	10-17-95	09:24a

TO_SETFL C	1,030	12-07-93	03:07p
TO_PBSTP C	1,349	05-03-94	04:05p
TO_OPSTP C	1,552	07-20-96	11:24a
TO_STOP C	1,096	08-08-94	02:27p
TO_SETXM C	2,179	09-28-94	04:15p
TO_SETRT C	5,202	07-11-96	02:29p
TO_START C	3,386	07-11-95	11:30a
TO_OPSTR C	1,715	10-30-97	03:27p
TCM_ENCO C	3,480	01-28-94	02:41p
TO_BLHDR C	11,442	10-13-95	12:54p
TO_RCVMS C	1,704	09-16-94	08:28a
TO_STDMP C	4,993	10-20-94	07:54a
TO_ABDMP C	3,240	08-02-94	04:09p
TO_PACRE C	4,442	03-06-97	02:47p
TO_CANCE C	3,707	03-06-97	02:46p
TO_PROCD C	4,272	12-12-94	01:08p
TO_EXTPK C	3,368	12-12-94	01:07p
TO_DFRAM C	4,854	12-12-94	01:08p
TO_DPKT C	5,260	12-12-94	01:10p
TO_EVTAB C	2,135	12-12-94	01:10p
TO_CDMSG C	3,649	03-06-97	02:46p
TO_RINIT C	3,975	10-13-95	12:07p
TO_INIT C	3,598	11-09-98	03:18p
TO_HSIO_ C	2,766	09-26-96	06:41p
TO_RCVHK C	1,068	02-27-96	03:48p
TO_GADDR C	1,541	03-05-96	10:17a
TQ_HSIO_ C	2,702	03-21-96	02:30p
TO_HBRD C	2,264	05-03-96	09:32a
TO_RBF C	1,299	10-07-96	12:41p
TO_UESH C	2,242	11-03-97	04:58p
TO_INES C	2,865	11-18-97	02:37p
TO_SET_T C	4,112	04-25-97	10:03a
TO_SET_H C	3,073	10-07-97	04:28p
TO_RTSTR C	14,959	11-19-98	03:23p
TO_VCDU C	4,976	09-24-97	11:22a
TO_EDU C	10,889	12-02-98	09:12a
TO_MAIN C	18,814	12-01-98	01:55p
NASCOM H	1,680	06-17-93	09:44a
TO_INCS H	752	09-25-96	04:41p
STRUCT H	1,174	01-27-94	04:52p
RSTABLES H	6,383	01-05-94	05:29p
TO_INIT H	3,892	10-19-94	09:59a
TO_STR H	10,589	02-20-96	02:59p
DS_SCI H	337	02-08-95	09:10a
TO_PKT H	5,018	02-20-97	02:54p
TO H	9,317	10-01-98	01:23p
COMP_TO BAT	871	10-07-96	04:20p
T BAT	16	03-18-96	02:45p
B BAT	36	03-18-96	01:15p
CF BAT	34	04-22-96	10:36a
LINK_TO CMD	1,592	09-25-96	01:13p
LINK_BIL CMD	1,393	06-11-96	11:00a
61 file(s)	214,589 bytes		

Directory of A:\ MPS\MVME177\DISK1\TY_DIR CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
TY_MODEL C	2,933	09-29-96	10:58a
TY_TLM C	1,645	09-04-97	09:26a
TY_CASE C	6,921	09-29-97	10:36a
TY_2CASE C	9,456	03-11-98	03:34p
TY_HSIO C	2,230	10-07-97	05:32p
TY_MON C	3,995	04-09-97	11:13a
TY_CFIG C	5,822	10-29-98	02:44p
TY_RBF C	4,889	03-14-97	08:49a
TY_LOG C	4,118	01-27-97	02:39p
TY_MAIN C	8,443	11-17-97	12:41p
TY_CFTLM C	2,881	08-23-97	03:47a
TY_SETCW C	1,962	08-23-97	03:48a
TY_CFCMD C	2,542	08-23-97	03:49a
TY_UCMD C	8,968	03-24-98	03:52p
TY_SMSG C	1,666	07-09-97	03:28p
TY_CFCV C	1,665	09-03-97	01:02p
TY_PUSR C	1,931	08-23-97	03:50a
TY_SETTM C	2,086	11-19-97	10:06a
TY_NTWK C	6,113	02-18-98	10:01a
TY_RATE C	4,826	09-29-98	03:59p
TY_DEF H	2,387	05-06-96	02:29p
TY_PROTO H	1,589	08-24-97	01:22a
COMP_TY BAT	344	10-20-97	11:23a
CF BAT	36	09-29-96	10:59a
LINK_TY CMD	1,438	11-19-97	11:55a
25 file(s) 90,886 bytes			

Directory of A:\ MPS\MVME177\DISK1\XT_DIR CI 1.4

	<DIR>	12-03-98	09:44a
	<DIR>	12-03-98	09:44a
TQ_RTSTP C	1,616	02-04-97	01:51p
TQ_HSIO_ C	2,922	09-26-96	06:48p
TQ_RTSTR C	13,147	11-19-98	03:20p
TQ_RBF C	1,318	10-07-96	12:45p
TQ_INES C	2,847	11-18-97	02:39p
TQ_UESH C	2,547	11-03-97	05:00p
TQ_CLCW C	2,714	09-23-96	09:10a
TQ_SNDCW C	2,520	02-02-98	04:51p
XRSE C	7,362	09-25-96	10:29a
TQ_VCDU C	5,500	12-03-98	03:42p
TQ_EDU C	13,729	12-02-98	09:25a
XT_INIT C	3,627	03-11-98	03:46p
TQ_LDBF C	2,123	11-10-98	08:29a
TQ_RDSOC C	4,425	02-26-98	03:03p
XT_MAIN C	18,184	12-01-98	01:55p
STRUCT H	1,174	01-27-94	04:52p
RSTABLES H	6,383	01-05-94	05:29p
XT H	2,184	09-29-98	03:24p
DS_STR H	13,711	10-18-94	10:46a
DS_DEF H	4,724	01-15-96	04:25p
PB H	1,609	03-21-96	10:14a
TO_STR H	10,589	02-20-96	02:59p

COMP_XT BAT	302	06-26-97	09:04a
CF BAT	34	04-22-96	10:42a
LINK_XT CMD	1,070	06-26-97	09:04a
25 file(s) 126,361 bytes			

MPS Release 1.6.0 MVME177 Source Software (Floppy Disk 2 of 7), 1/15/99

Directory of A:\MPS\MVME177\DISK2 CI 1.4

AD_DIR	<DIR>	12-03-98	09:50a
OP_DIR	<DIR>	12-03-98	09:50a
MC_DIR	<DIR>	12-03-98	09:50a
DI_DIR	<DIR>	12-03-98	09:50a
TI_DIR	<DIR>	12-03-98	09:50a
SC_DIR	<DIR>	12-03-98	09:50a
CI_DIR	<DIR>	12-03-98	09:50a
NETWORK	<DIR>	12-03-98	09:50a
IN_DIR	<DIR>	12-03-98	09:50a
MO_DIR	<DIR>	12-03-98	09:51a
UT_DIR	<DIR>	12-03-98	09:51a
MT_DIR	<DIR>	12-03-98	09:51a
PDB_GEN	<DIR>	12-03-98	09:51a
13 file(s) 0 bytes			

Directory of A:\ MPS\MVME177\DISK2\AD_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
AD_ALLOC C	1,925	05-15-97	03:17p
AD_CTRL C	5,051	06-09-95	04:42p
AD_MAIN C	3,271	01-28-98	10:49a
AD_SEND C	4,468	01-28-98	01:32p
AD H	1,858	01-28-98	10:52a
COMP_AD BAT	71	05-13-96	02:56p
CF BAT	34	10-04-96	11:02a
LINK_AD CMD	907	03-30-95	01:53p
TEST CMD	200	07-11-96	12:02p
9 file(s) 17,785 bytes			

Directory of A:\ MPS\MVME177\DISK2\CI_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
CI_ACPT C	11,046	05-12-97	10:54a
CI_ADDCB C	10,051	06-19-97	03:15p
CI_ARGS C	3,042	10-11-96	01:58p
CI_BLOCK C	6,646	05-12-97	10:55a
CI_BYPAS C	7,502	03-17-97	04:31p
CI_CHHDR C	11,341	09-11-96	08:27a
CI_CTRL C	4,944	02-06-97	04:04p
CI_CXSUM C	1,598	09-10-96	05:53a
CI_DPCMD C	1,543	09-10-96	06:58a
CI_ECC C	1,114	02-04-98	11:41a
CI_HSIO C	5,576	11-26-97	10:06a
CI_LOGCB C	2,366	09-10-96	05:54a

CI_LOGPK C	1,384	09-10-96	06:59a
CI_LOGTF C	1,375	09-10-96	05:52a
CI_M2L C	2,299	09-10-96	07:16a
CI_MAIN C	5,566	11-26-97	10:04a
CI_PKT C	5,884	03-25-98	09:38a
CI_PUTQ C	1,146	06-17-97	11:24a
CI_RCVHK C	3,023	09-10-96	06:58a
CI_ROUTE C	2,226	02-07-97	09:54a
CI_SEG C	4,304	05-12-97	10:54a
CI_SER C	2,557	09-16-97	11:25a
CI_SETCL C	979	09-17-97	02:53p
CI_TFCHK C	5,520	05-12-97	10:56a
CI_TFCON C	5,131	05-12-97	10:56a
CI_TFCTR C	2,025	09-10-96	07:00a
CI_TYPIN C	12,604	10-18-96	05:19p
CI_UDP C	5,164	02-04-98	12:11p
CI_VLPKT C	4,487	05-12-97	10:56a
CI_VLSEQ C	7,955	02-10-97	08:25a
CI_ADJCN C	1,309	09-23-97	09:27a
CI_ADJCP C	1,324	09-23-97	09:26a
CI_LOG C	11,063	02-10-97	08:31a
CI_INIT C	9,856	02-04-98	11:41a
CI_POLY C	5,703	11-13-97	11:41a
CI_CRC C	4,494	11-06-97	12:05p
CI_DQUE C	3,066	12-16-97	03:24a
CI H	4,330	11-26-97	10:08a
CI_DEF H	2,099	12-16-97	10:55p
CI_INCS H	934	08-07-97	11:21a
CI_INIT H	7,350	09-17-97	10:52a
CI_PKT H	8,640	02-20-96	01:43p
CI_PROTO H	744	09-17-97	10:21a
CI_STR H	5,601	11-26-97	10:09a
CF BAT	34	10-02-96	05:31p
COMP_CI BAT	1,398	12-16-97	03:24a
LINK_CI CMD	1,432	12-16-97	03:25a
47 file(s) 209,775 bytes			

Directory of A:\ MPS\MVME177\DISK2\DI_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
DI_DUMP C	2,509	10-03-96	05:57p
DI_MAIN C	10,348	06-18-97	05:12p
DI_PUTQ C	1,869	06-18-97	05:12p
DI_INIT C	1,234	06-17-97	10:35a
DI H	866	10-03-96	05:50p
COMP_DI BAT	68	01-31-97	02:25p
CF BAT	34	10-03-96	05:58p
LINK_DI CMD	807	01-31-97	02:26p
8 file(s) 17,735 bytes			

Directory of A:\ MPS\MVME177\DISK2\IN_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
IN_MAIN C	3,487	07-22-97	04:19p

IN_INIT C	1,143	05-30-97	04:17p
IN_SOCK C	1,837	07-11-97	09:44a
IN H	769	07-11-97	09:47a
COMP_IN BAT	60	07-11-97	09:51a
CF BAT	34	10-04-96	11:10a
LINK_IN CMD	766	07-11-97	09:51a
7 file(s) 8,096 bytes			

Directory of A:\ MPS\MVME177\DISK2\MC_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
MC_INIT C	1,913	01-26-98	03:52p
MC_SUBS C	4,862	02-20-98	11:52a
MC_CTRL C	1,449	09-10-96	07:05a
MC_FUNC C	1,591	02-19-97	02:26p
MC_HASH C	1,356	09-10-96	07:07a
MC_FIND C	1,508	09-10-96	07:00a
MC_MSG C	3,297	02-18-98	01:03p
MC_SETVR C	1,500	03-17-97	02:57p
MC_IDEN C	6,356	11-17-97	11:35a
MC_CMDS C	5,312	02-18-98	12:06p
MC_PSEND C	4,060	03-24-98	05:04p
MC_VERS C	3,879	01-27-98	03:08p
MC_CHKFX C	2,710	02-19-98	04:10p
MC_CHKVR C	6,215	03-22-98	04:29p
MC_NRML C	7,631	03-26-98	12:02p
MC_PUTQ C	1,164	06-17-97	11:40a
MC_XQT C	3,916	02-18-98	12:34p
MC_OPCMD C	5,710	03-26-98	11:54a
MC_MAIN C	5,528	01-26-98	02:28p
MC_INCS H	581	03-07-95	11:52a
MC_PROTO H	2,728	02-18-98	11:56a
MC H	2,867	01-27-98	01:38p
COMP_MC BAT	1,613	01-28-98	02:12p
CF BAT	34	10-04-96	12:35p
LINK_MC CMD	1,690	01-28-98	02:13p
25 file(s) 79,470 bytes			

Directory of A:\ MPS\MVME177\DISK2\MO_DIR CI 1.4

	<DIR>	12-03-98	09:51a
	<DIR>	12-03-98	09:51a
MO_CHMD2 C	5,380	08-08-97	03:54p
MO_CHMOD C	4,680	08-10-97	01:45p
MO_COS C	1,899	09-19-97	10:55a
MO_DISMO C	7,962	08-13-96	04:49p
MO_EXP C	2,114	09-19-97	10:55a
MO_HASH C	1,309	08-12-96	05:12p
MO_HINS C	10,879	09-02-97	09:45a
MO_HSRCH C	2,446	08-13-96	02:45p
MO_INIT C	1,902	09-16-96	04:16p
MO_RDALG C	4,896	01-27-98	10:58a
MO_RDTLM C	6,288	01-27-98	11:02a
MO_RDTBL C	6,621	01-27-98	11:00a
MO_RAMP C	2,018	09-19-97	10:57a

MO_SIN C	2,247	09-19-97	10:55a
MO_TBL C	8,737	10-01-97	11:19a
MO_UPDA C	5,876	10-01-97	11:53a
MO_ACTIV C	4,096	08-13-97	04:59p
MO_DSPLY C	1,471	10-01-96	03:34p
MO_SEND C	6,867	09-03-97	02:05p
MO_MAIN C	9,789	01-27-98	10:56a
MO_NSE C	3,281	08-29-97	04:05p
MO_STR H	4,810	08-29-97	04:51p
MO H	2,507	10-01-97	10:47a
MO_PROTO H	2,290	08-10-97	02:29p
MO_INCS H	808	08-10-97	01:46p
MO_DEF H	921	08-29-97	02:28p
COMP_MO BAT	434	08-29-97	04:40p
CF BAT	34	09-12-96	04:29p
LINK_MO CMD	1,322	08-29-97	04:41p
29 file(s)	113,884 bytes		

Directory of A:\ MPS\MVME177\DISK2\MT_DIR CI 1.4

	<DIR>	12-03-98	09:51a
	<DIR>	12-03-98	09:51a
MT_PARMS C	5,621	01-27-98	03:17p
MT_MAIN C	4,697	01-23-98	11:15a
MT_CRPRM C	1,356	06-12-96	11:11a
MT_LOC C	9,931	01-27-98	03:16p
MT_DISC C	4,982	01-27-98	03:15p
MT_FIND C	1,582	06-10-96	11:59a
MT_HASH C	1,309	06-10-96	11:59a
MT_SET C	8,262	11-17-97	10:47a
MT_DSPLY C	8,147	04-08-97	04:48p
MT_SHOW C	3,512	06-12-96	02:09p
MT_CVEUA C	2,068	06-21-96	02:39p
MT_CVTEU C	2,673	06-17-96	05:03p
MT_CVTRW C	2,220	06-21-96	02:40p
MT_PTRTB C	2,415	02-06-97	04:25p
MT_SETTL C	4,416	03-24-98	01:50p
MT_IVALU C	5,026	01-27-98	04:07p
MT_UPD C	2,543	11-11-97	09:16a
MT_GETTL C	9,760	03-24-98	02:23p
MT_SETAP C	4,892	04-03-97	03:03p
MT_C1750 C	5,557	11-19-97	04:57p
MT_INCS H	622	06-10-96	12:05p
MT_IPTRT H	666	06-12-96	11:17a
MT_IVALU H	1,617	09-20-94	11:10a
MT_PROTO H	2,848	11-19-97	02:45p
MT H	2,031	01-23-98	10:58a
COMP_MT BAT	316	11-17-97	11:10a
CF BAT	34	09-16-96	05:19p
LINK_MT CMD	1,106	11-17-97	11:11a
28 file(s)	100,209 bytes		

Attachment J - Listing of Delivery Contents

Directory of A:\ MPS\MVME177\DISK2\NETWORK CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
SEND C	4,801	03-03-98	12:59p
MOMD C	2,322	05-16-97	09:00a
MREC C	2,862	05-27-97	01:13p
MULT C	11,409	08-09-97	12:15p
UDPT2 C	3,453	02-12-98	03:14p
MUDP1 C	2,508	05-16-97	8:54a
SSEND C	9,221	06-17-97	11:08a
MTEST C	6,837	05-19-97	08:57a
MMSEND C	3,210	05-20-97	04:26p
UDPSEND C	3,489	06-13-97	10:52a
PSEND C	10,414	06-19-97	04:13p
UDPT1 C	2,836	02-03-98	01:18p
MOMDSIM C	7,656	02-18-98	03:46p
DEMO H	4,057	05-16-97	11:37a
CF BAT	30	01-14-97	01:12a
COMP_NET BAT	74	08-15-97	10:16a
SEND CMD	190	07-25-96	10:17p
UDPT1 CMD	191	08-01-96	10:55a
UDPT2 CMD	191	08-15-96	12:27a
MULT CMD	190	05-07-97	12:45p
MSEND CMD	191	05-08-97	11:37a
SSEND CMD	191	05-13-97	10:57a
MTEST CMD	191	05-19-97	08:48a
MREC CMD	190	05-27-97	12:29p
MMSEND CMD	192	05-20-97	12:34p
MOMDSIM CMD	193	08-08-97	01:55p
UDPSEND CMD	193	05-29-97	08:25a
PSEND CMD	191	06-19-97	09:29a
SEND SY	18,880	01-11-99	06:06p
UDPT1 SY	16,840	01-11-99	06:05p
UDPT2 SY	16,840	01-11-99	06:06p
MOMDSIM SY	20,314	01-11-99	06:06p

32 file(s) 150,347 bytes

Directory of A:\ MPS\MVME177\DISK2\OP_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
OP_ERMSG C	1,718	05-10-94	02:45p
OP_MMSG C	2,018	09-10-93	05:40p
OP_MSG C	1,235	12-01-93	06:12p
OP_NMSG C	1,669	09-10-93	05:41p
OP_SMSGO C	1,365	09-10-93	05:42p
OP_SMSG C	4,370	07-17-96	04:03p
OP_QMGR C	5,612	11-16-93	12:56p
OP_XMIT C	1,658	11-04-93	04:17p
OP_DBMSG C	2,233	11-04-93	04:16p
OP_STATN C	2,969	01-24-94	12:30p
OP_QOPTS C	3,841	01-24-94	12:32p
OP_LROW C	3,708	01-14-94	02:49p
OP_SROW C	3,596	01-14-94	02:55p
OP_STATC C	5,804	01-24-94	12:30p

OP_MAIN C	5,770	12-01-98	10:49a
COMP_OP BAT	288	10-04-96	11:03a
CF BAT	34	10-04-96	11:05a
LINK_OP CMD	962	05-29-97	04:34p
18 file(s) 48,850 bytes			

Directory of A:\ MPS\MVME177\DISK2\PDB_GEN CI 1.4

	<DIR>	12-03-98	09:51a
	<DIR>	12-03-98	09:51a
PD_WRTLM C	6,794	02-18-98	10:46a
PD_VERTR C	5,974	12-23-97	02:33p
PD_CDVER C	5,255	12-25-97	02:32a
PD_CAVER C	2,569	03-24-98	03:40p
PD_MAIN C	10,657	04-10-98	01:55p
PD_IVALU C	7,552	02-18-98	11:18a
PD_VERS C	12,165	03-24-98	03:44p
PD_IVAL2 C	12,139	04-13-98	02:06p
PD_FREE C	5,408	02-18-98	10:43a
PD_RTLM C	5,759	01-17-98	04:08p
PD_RLOC C	5,626	01-19-98	04:18p
PD_RDISC C	6,520	01-19-98	04:19p
PD_WSUBS C	5,454	02-17-98	02:23p
PD_TVAR C	15,225	03-24-98	05:41p
PD_TFIX C	9,303	02-17-98	02:45p
PD_WCMDS C	6,178	01-17-98	02:38p
PD_TCMDS C	6,135	02-11-98	10:38a
PD_RCMD C	4,919	02-17-98	05:19p
PD_CMDS C	4,057	02-13-98	05:01p
PD_DISC C	10,628	01-17-98	02:37p
PD_TLM C	9,994	12-25-97	03:16a
PD_WRVAL C	6,600	04-13-98	02:14p
PD_IVALW C	6,613	01-19-98	04:16p
PD_IVAL1 C	3,638	04-13-98	02:02p
PD_CVETR C	8,336	11-21-97	04:15p
PD_LOC C	8,262	11-21-97	03:38p
PD_PARM C	4,027	11-21-97	03:34p
PD_C1750 C	5,321	11-21-97	01:35p
PD_XTLP C	3,757	02-17-98	03:40p
PD_OPT C	1,624	11-21-97	01:25p
PD_HASH C	1,274	11-21-97	01:25p
PD_FIND C	2,153	11-21-97	01:25p
PD_XTRAC C	2,133	11-21-97	01:23p
PD_IVAL3 C	11,359	04-13-98	02:09p
PD_CUVTR C	4,992	12-23-97	03:36p
PD_PROTO H	3,737	02-13-98	04:52p
PD H	4,440	04-13-98	02:00p
PD_INCS H	626	10-07-97	02:29p
CF BAT	36	04-13-98	02:19p
COMP_PDB BAT	680	01-19-98	04:25p
LINK_PDB CMD	2,374	12-24-97	11:22a
41 file(s) 240,293 bytes			

Attachment J - Listing of Delivery Contents

Directory of A:\ MPS\MVME177\DISK2\SC_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
SC_ALOAD C	3,383	07-25-97	11:05a
SC_INIT C	4,234	08-04-97	02:48p
SC_MAIN C	5,137	08-10-97	01:30p
SC_TNEXT C	2,704	08-04-97	01:23p
SC_UTILS C	6,251	08-06-97	05:06p
SC_DOATP C	9,167	06-17-97	11:54a
SC_RSTRT C	3,221	08-04-97	01:48p
SC_DORTP C	3,828	06-17-97	11:55a
SC_CMDS C	13,252	08-04-97	01:54p
SC_INIT H	1,427	08-04-97	01:19p
SC H	3,411	08-04-97	11:45a
SC_PROTO H	1,003	05-08-97	09:56a
SC_PKT H	6,381	07-25-97	09:35a
SC_INCS H	1,160	05-09-97	09:20a
COMP_SC BAT	835	04-03-97	02:14p
CF BAT	34	10-04-96	12:34p
LINK_SC CMD	990	04-03-97	02:17p
17 file(s)	66,418 bytes		

Directory of A:\ MPS\MVME177\DISK2\TI_DIR CI 1.4

	<DIR>	12-03-98	09:50a
	<DIR>	12-03-98	09:50a
TI_WRITE C	2,004	09-27-94	04:04p
TI_INIT C	5,927	11-20-97	03:20a
TI_ASCTM C	2,302	10-28-94	06:35p
TI_WAIT C	1,587	09-27-94	04:03p
TI_SETSL C	2,047	09-13-93	02:55p
TI_SLEEP C	2,160	03-03-94	05:26p
TI_SETGM C	2,195	11-19-97	04:35p
TI_TO_SC C	1,609	04-24-95	01:34p
TI_GETGM C	1,402	09-27-94	03:45p
TI_DELAY C	1,034	09-27-94	03:44p
TI_GETSC C	1,241	09-23-97	09:03a
TI_SETSC C	1,918	09-24-97	09:19a
TI_ACCEL C	1,684	11-02-94	07:00p
LOG_CORR C	814	12-29-94	02:38p
TI_MAIN C	8,676	11-20-97	05:11a
TI_READ C	6,631	11-20-97	03:33a
TI_SC_SL C	1,704	04-14-95	02:57p
TI_TO_YD C	1,843	04-12-94	04:48p
TI_1HZ C	12,260	07-19-96	01:47p
TI_SBUTD C	3,124	09-27-94	03:54p
TI_ADUTD C	3,200	07-01-94	01:36p
TI_ADDUT C	6,727	09-27-94	03:33p
TI_CMDS C	8,059	04-24-95	01:35p
TI_UTILS C	9,384	01-13-95	04:02p
TI_SUBUT C	5,528	06-30-94	07:05p
TI_CORR C	6,009	01-23-95	02:24p
TI_DOCOR C	5,033	01-16-95	03:57p
TI_NCC C	23,640	02-06-95	03:34p
TI_334 C	9,402	08-04-95	05:27p

TI_SETNS C	3,385	10-11-94	05:54p
TI_PB5C C	1,982	01-08-99	09:00a
TI_SFSCT C	1,111	09-23-97	09:10a
TI_GFSCT C	1,172	09-22-97	04:02p
TI_SSTBS C	1,015	09-23-97	09:09a
TI_GREGR C	2,874	09-24-97	10:24a
TI_SDN C	2,542	09-22-97	04:21p
TI_INCS H	793	09-22-97	04:19p
TI_STR H	1,596	11-19-97	04:09p
TI H	7,284	11-19-97	04:07p
TI_INIT H	2,458	12-30-94	11:50a
TI_PROTO H	4,082	09-23-97	09:05a
DEMO H	2,556	01-17-95	02:53p
TI_334 H	3,034	08-04-95	05:23p
TI_PKT H	8,880	07-01-94	01:15p
TI_NCC H	2,526	01-04-95	12:05p
SDNCAL H	3,904	09-22-97	02:38p
COMP_TI BAT	633	09-23-97	11:12a
CF BAT	34	10-04-96	11:13a
BIL BAT	36	10-04-96	02:28p
LINK_TI CMD	1,331	09-23-97	11:12a
50 file(s) 192,372 bytes			

Directory of A:\ MPS\MVME177\DISK2\UT_DIR CI 1.6

	<DIR>	12-03-98	09:51a
	<DIR>	12-03-98	09:51a
FQ2 C	4,251	06-18-96	04:05p
UT_GET C	3,156	10-05-94	08:48p
FQ2 H	3,942	06-18-96	02:33p
COMP_UT BAT	31	01-13-97	11:07p
4 file(s) 11,380 bytes			

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Directory of A:\ MPS\MVME177\DISK3 CI 1.6

MDB_GEN	<DIR>	12-03-98	09:58a
SCN_CVT	<DIR>	12-03-98	09:59a
DCU_CVT	<DIR>	12-03-98	09:59a
AE_DIR	<DIR>	12-03-98	09:59a
4 file(s) 0 bytes			

Directory of A:\ MPS\MVME177\DISK3\AE_DIR CI 1.4

	<DIR>	12-03-98	09:59a
	<DIR>	12-03-98	09:59a
AE_MAIN C	2,484	12-16-97	11:38p
AE_SER C	1,418	12-16-97	11:38p
CF BAT	34	11-26-97	09:17a
COMP_AE BAT	39	11-26-97	09:16a
LINK_AE CMD	711	11-26-97	09:17a
5 file(s) 4,686 bytes			

Directory of A:\ MPS\MVME177\DISK3\DCU_CVT CI 1.6

	<DIR>	12-03-98	09:59a
	<DIR>	12-03-98	09:59a
DCU_MAIN C	5,105	02-05-98	10:46a
DCU_PARS C	4,218	02-05-98	10:46a
DCU_SNGL C	3,471	02-05-98	11:05a
DCU_MULT C	4,041	02-05-98	11:05a
DCU_RANG C	11,643	02-05-98	11:01a
COMP_DCU BAT	90	01-16-98	02:42p
CF BAT	36	01-16-98	03:32p
LINK_DCU CMD	1,493	01-16-98	03:29p
8 file(s)	30,097 bytes		

Directory of A:\ MPS\MVME177\DISK3\MDB_GEN CI 1.6

	<DIR>	12-03-98	09:58a
	<DIR>	12-03-98	09:58a
MD_WRITE C	7,351	09-12-97	05:09p
MD_CVRT C	17,468	09-26-97	10:58a
MD_CWDSW C	9,358	09-26-97	11:00a
MD_CVTRW C	8,296	04-07-98	03:54p
MD_TBL2 C	3,504	08-19-97	01:37p
MD_TABLE C	12,496	09-26-97	03:31p
MD_RAMP C	2,102	08-25-97	11:57a
MD_EXP C	2,070	09-02-97	05:54p
MD_COS C	2,051	09-19-97	11:01a
MD_SIN C	2,142	09-19-97	11:02a
MD_WORK C	6,299	09-10-97	04:20p
MD_ALG C	10,043	09-18-97	10:30a
MD_TLM4 C	14,938	10-01-97	01:00p
MD_TLM1 C	3,730	08-11-97	04:42p
MD_HASH C	1,802	07-23-97	11:03a
MD_FIND C	3,053	07-30-97	04:42p
MD_CVTEU C	3,045	07-30-97	04:49p
MD_RCAL C	12,705	12-17-97	03:16p
MD_INIT C	2,519	08-27-97	06:11p
MD_CVTMM C	5,298	11-03-97	03:57p
MD_TBL1 C	4,031	08-12-97	11:04a
MD_SIGN C	2,039	07-07-97	05:19p
MD_RPOLY C	5,196	09-02-97	10:31a
MD_RBRKT C	3,261	10-13-97	10:39a
MD_PR2EF C	3,352	10-13-97	10:47a
MD_PEU2R C	6,410	04-07-98	03:55p
MD_MINUS C	2,039	07-07-97	05:14p
MD_FROOT C	3,788	10-21-97	03:42p
MD_BRGVI C	6,726	11-26-97	01:31p
PD_XTRAC C	2,121	11-27-96	03:07p
MD_TLM2 C	8,451	08-21-97	01:21p
MD_TLM C	9,371	09-10-97	04:00p
MD_TLM3 C	8,360	08-21-97	01:22p
MD_MAIN C	7,562	01-28-98	11:11a
MD_TLPAR C	5,161	01-28-98	01:39p
MD_PROTO H	4,282	10-13-97	10:18a
MD H	2,843	10-06-97	10:06a
MD_INCS H	841	10-06-97	10:05a

MD_STR H	3,314	10-06-97	10:05a
MD_DEF H	2,563	10-09-97	10:10a
COMP_MDB BAT	605	07-30-97	10:47a
CF BAT	36	07-30-97	10:49a
LINK_MDB CMD	1,802	08-28-97	10:23a
43 file(s) 224,424 bytes			

Directory of A:\ MPS\MVME177\DISK3\SCN_CVT CI 1.6

	<DIR>	12-03-98	09:59a
	<DIR>	12-03-98	09:59a
SCN_INIT C	3,233	02-05-98	03:59p
SCN_MAIN C	4,802	02-05-98	03:48p
SCN_CSF C	14,603	02-05-98	04:18p
SCN_RPL C	2,438	02-05-98	04:06p
COMP_SCN BAT	70	01-13-98	02:06p
CF BAT	36	01-05-98	11:43p
LINK_SCN CMD	1,371	01-13-98	02:07p
7 file(s) 26,553 bytes			

MPS Release 1.6.0 MVME177 Source Software (Floppy Disk 4 of 7), 1/15/99

Directory of A:\ MPS\MVME177\DISK4 CI 1.4

PKUNZIP EXE	29,378	02-01-93	02:04a
BLD1_6	<DIR>	12-04-98	10:29a
1 file(s) 29,378 bytes			

Directory of A:\ MPS\MVME177\DISK4\BLD1_6 CI 1.4

	<DIR>	12-04-98	10:29a .
	<DIR>	12-04-98	10:29a ..
CLEAR	22	12-04-98	10:32a
RUN_MPS	279	12-04-98	10:33a
ACPT	<DIR>	12-04-98	10:29a
DATABASE	<DIR>	12-04-98	10:29a
NETWORK	<DIR>	12-04-98	10:30a
2 file(s) 301 bytes			

Directory of A:\ MPS\MVME177\DISK4\BLD1_6\ACPT CI 1.4

	<DIR>	12-04-98	10:29a
	<DIR>	12-04-98	10:29a
AC BKP	895	12-04-98	10:35a
MOMDSIM SY	20,314	01-11-99	06:06p
SEND SY	18,880	01-11-99	06:06p
UDPT1 SY	16,840	01-11-99	06:05p
UDPT2 SY	16,840	01-11-99	06:06p
XAD	16,644	01-11-99	02:28p
XAE	16,348	01-11-99	02:53p
XCI	34,934	01-11-99	02:45p
XDI	18,412	01-11-99	02:36p
XDS	20,968	01-11-99	01:54p
XGT	18,964	01-11-99	02:04p
XIN	17,824	01-11-99	02:49p

XMC	27,116	01-11-99	02:32p
XMO	34,504	01-11-99	02:51p
XMT	27,700	01-11-99	02:47p
XOP	20,652	01-11-99	02:30p
XSC	22,072	01-11-99	02:41p
XSM	32,542	01-11-99	02:11p
XTI	37,266	01-11-99	02:40p
XTO	37,876	01-11-99	02:19p
XTY	41,160	01-11-99	02:26p
XXT	37,152	01-11-99	02:22p
22 file(s) 535,903 bytes			

Directory of A:\ MPS\MVME177\DISK4\BLD1_6\DATABASE CI 1.4

	<DIR>	12-04-98	10:29a
	<DIR>	12-04-98	10:29a
XDCU	48,468	01-11-99	03:09p
XMDB	67,228	01-11-99	03:08p
XPDB	83,260	01-11-99	03:02p
XSCN	45,924	01-11-99	03:10p
4 file(s) 244,880 bytes			

Directory of A:\ MPS\MVME177\DISK4\BLD1_6\NETWORK CI 1.4

	<DIR>	12-04-98	10:30a
	<DIR>	12-04-98	10:30a
CODA IP	366	12-04-98	10:37a
CODA PRT	312	12-04-98	10:38a
IP1 GUI	84	12-04-98	10:38a
OP1_IP OP	119	12-04-98	10:38a
OP1_IP SIM	122	12-04-98	10:38a
OP1_IP TST	122	12-04-98	10:38a
OP1_PRT OP	298	12-04-98	10:38a
OP1_PRT SIM	298	12-04-98	10:38a
OP1_PRT TST	298	12-04-98	10:38a
OP2_IP OP	119	12-04-98	10:38a
OP2_IP SIM	122	12-04-98	10:38a
OP2_IP TST	122	12-04-98	10:38a
OP2_PRT OP	298	12-04-98	10:38a
OP2_PRT SIM	298	12-04-98	10:38a
OP2_PRT TST	298	12-04-98	10:38a
SUP1_IP OP	119	12-04-98	10:38a
SUP1_IP SIM	122	12-04-98	10:38a
SUP1_IP TST	120	12-04-98	10:38a
SUP1_PRT OP	298	12-04-98	10:38a
SUP1_PRT SIM	298	12-04-98	10:38a
SUP1_PRT TST	298	12-04-98	10:38a
SUP2_IP OP	119	12-04-98	10:38a
SUP2_IP SIM	122	12-04-98	10:38a
SUP2_IP TST	122	12-04-98	10:38a
SUP2_PRT OP	298	12-04-98	10:38a
SUP2_PRT SIM	298	12-04-98	10:38a
SUP2_PRT TST	298	12-04-98	10:38a
27 file(s) 5,788 bytes			

Attachment J - Listing of Delivery Contents

MPS Release 1.6.0 MVME177 Source Software (Floppy Disk 5 of 7), 1/15/99

Directory of A:\ MPS\MVME177\DISK5 CI 1.4

PDB20 ZIP		856,703	12-04-98	11:08a
1 file(s)	856,703 bytes			

MPS Release 1.6.0 MVME177 Source Software (Floppy Disk 6 of 7), 1/15/99

Directory of A:\ MPS\MVME177\DISK6 CI 1.4

PDB20SRC ZIP		1,457,664	12-02-98	04:14p
1 file(s)	1,457,664 bytes			

MPS Release 1.6.0 MVME177 Source Software (Floppy Disk 7 of 7), 1/15/99

Directory of A:\ MPS\MVME177\DISK7 CI 1.4

PDB20SRC ZIP		279,365	12-02-98	04:15p
1 file(s)	279,365 bytes			

Attachment K — ETS Documentation References

The following change information is applicable to documentation references used by MPS Release 1.6.0.

Document	Location
--, User's Guide for ETS Multimode Portable Simulator, Release 1.5.0, September, 1998 (Minimal updates being made for Release 1.6.0. An updated version will be made available on the ETS web site in February, 1999.)	6

Location Legend:

No.	Designation
6	http://esdis-it.gsfc.nasa.gov/ets/etsdoc.html

Attachment L — Mission Systems Configuration Management Form

This attachment contains the completed Mission Systems Configuration Management (MSCM) form for the delivery of the MPS Release 1.6.0.

Mission Systems Configuration Management Form

1. ORIGINATOR	2. ORGANIZATION	3. PHONE	4. E-MAIL ADDRESS
Estelle Noone	CSC	301-805-3653	enoone@csc.com

5. ELEMENT	6. INSTALLATION PRIORITY	7. TRACKING NUMBER (Assigned by CM Office)
ETS (HRS, LRS, MPS) MPS	Routine	

8. SOURCE CHANGE REQUEST(S):

ETS DRB approved MPS release for SMO DR closure and Change Request (CR) implementation.

9. APPROVALS

Element Manager _____ / /

Flight Ops Director _____ / /

Operations Manager _____ / /

10. DELIVERED SYSTEM (Check all that apply)

	Name	Version	Media Identification	Identification Date
☐ Hardware				
☒ Software	MPS	R1.6.0	Seven 3.5" Diskettes	1/15/99
☐ Database				
☒ Documentation:				
MPS Delivery Package		n/a	3.5" Diskette	1/15/99
☐ Other				

11. CHANGE DESCRIPTION

MPS Release 1.6.0 closes the list of SMO DRs and CRs identified in the attached delivery package.

12. ATTACHMENT(S): Check if YES ☒

Description: MPS Release 1.6.0 delivery package (cover letter with attachments) dated 1/15/99

13. CM OFFICE USE

	Location (Bldg/Room)	Slot location(s)
Hardware	/	
Media	/	
Documentation	/	

Installation date / /

CM Office Signature _____

Form MSCM (970327)

Attachment M – List of Year 2000 Test Dates

In support of the EOSDIS Mission Systems Year 2000 testing initiatives, Year 2000 (Y2K) testing was performed as part of system testing of MPS Release 1.6.0. The following table was adapted from Table 4-1 of the EOSDIS Mission Systems Year 2000 Test Plan and shows the test dates that were used in the MPS Y2K testing. The MPS as a data simulator is considered a low-risk system.

ID	Date(s)	Purpose	Recommendation for Low-Risk Systems	Tested for MPS Release 1.6.0
A	4/8/1999 >4 /9/1999	Julian day 99 of 1999	Optional	Yes Also for orbit modeling and stored command simulation
B	8/21/1999 > 8/22/1999	Unremediated GPS (1908-01-06)	Optional	No
C	9/9/99	Programmer default date		No
D	12/31/1999 > 01/01/2000	Y2K rollover – note 01/01/1900 was a Monday	Required***	Yes Also done for EDOS Sim mode
E	02/28/2000 > 02/29/2000	Tests Leap Year	Required	Yes Also done for EDOS Sim mode
F	02/29/2000 > 03/01/2000	Tests Leap Year	Optional	Yes
G	Day 365>366 (Y2000)	Julian Day rollover – Leap Year Test	Required**	Yes
H	Year 2000, Day 366 > Year 2001, Day 001	Julian Day rollover – Leap Year Test (Same dates as test I).	Optional**	Yes Also done for EDOS Sim mode
I	12/31/2000 > 01/01/2001	First Day 21st Century (Same dates as test H).	Required	Yes Also done for EDOS Sim mode
J	02/28/2004 > 02/29/2004	Tests Leap Year	Optional	No
K	Critical Business Dates	Boundary Testing around date	Recommended	No
L	Window Dates	Tests Window Boundaries and Backward Time Test****	Recommended	No
M	Random Dates in Year 2000	Regression test to ensure system works for various dates in the year 2000	Required	Yes

Based upon Table 3-1 of the NASA Year 2000 Test and Certification Guidelines and Requirements Vol. I

Legend

The ">"represents a rollover of the system clock(s) from the first date to the second date.

Critical business dates for accounting systems examples: Fiscal year rollover, quarterly dates, and year-end dates. For non-business systems, dates are those systems refer to dates which trigger periodic system processes such as backup or purge dates, or planning and scheduling processes. Fiscal year end processes need to be tested using 9/30/1997>10/01/1999 to ensure that the fiscal year changes to 2000.

*An External date/time source to be addressed in the Contingency Plan

** Requirements apply to systems using Julian Dates only. Requirements do not apply to other systems.

*** Low and medium risk inventory items that opt to power down during the January 1, 2000 rollover are not required to test the 12/31/1999>01/01/2000 date. These inventory items must, at a minimum, conduct time shift testing for random dates in the Year 2000 ensure general functionality is validated.

**** Backward Time Test (for window dates) ensures that 20th century data is accessible when system clocks are set to the 21st century.

***** Strongly recommended for business systems