

Subject: ETS MPS/PM-1 (Aqua) Engineering Release 6.7 BETA Delivery  
Date: Fri, 4 Apr 2003 10:07:20 -0500  
From: Ernest Quintin, CSC  
To: Willie Fuller

Willie,

We are pleased to deliver a Beta version of the ETS Multimode Portable Simulator (MPS) for PM-1 (MPS/Aqua), Release 6.7. This engineering release delivery contains code enhancements to answer Discrepancy Report ETS0451, removal of dependence upon Oracle as a database repository. This Beta release is being delivered to assist Raytheon at Denver, where more copies of the MPS/Aqua simulator are required to support simultaneous testing of different EMOS components. Complete descriptions of the changes and enhancements are contained in the attachments. I wish to call your attention to the fact that, because this is a Beta release, only the IP-mode telemetry transmission and command receipt have been adequately tested. Complete testing will be performed prior to the final delivery.

There are seven attachments to this letter.

Attachment A describes the capabilities included in this release.  
Attachment B describes installation instructions for this release.  
Attachment C describes special operating instructions for this release.  
Attachment D contains the resolved DR descriptions  
Attachment E contains the system limitations.  
Attachment F contains an updated release history summary matrix.  
Attachment G contains an updated Mission Systems Configuration Management (MSCM) form.

One copy of the CD is being given to Guy Cordier, who will forward it to Raytheon at Denver.

If you have any questions about this delivery, please do not hesitate to contact Estelle Noone or myself.

Ernest Quintin  
301-805-3649

CC: Alexander Krimchansky, Guy Cordier, Kevin Klem,  
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## Attachment A – Summary of Operational Changes

### Operational Capabilities of MPS/Aqua Release 6.7

New or modified capabilities with this release are noted in **Bold**.

#### Telemetry:

- Transmit telemetry in IP or Serial (clock/data) mode
- Pack telemetry packets and CLCWs into CADUs when in Serial mode
- Generate one stream of CADUs when in Serial mode
- Generate one stream of telemetry formatted as EDUs when in IP mode
- Packet rate may be controlled
- Start or stop one telemetry stream
- CLCW transmitted via EDUs when in IP mode
- CLCW contents can be overridden by the operator
- Transmission of CLCW can be inhibited when in IP mode
- In IP mode CLCW Transmit Start and Stop is coupled to H/K Telemetry Start and Stop (may be de-coupled by the operator)
- In IP mode CLCW Transmit rate may be set by the operator
- Ingest the telemetry-related PDB files **directly from PDB flat files**
- Generate telemetry packets from information contained in the PDB
- Maintain telemetry nodes from information contained in the PDB
- Populate telemetry packets with data values from information contained in the PDB
- Generate correct secondary headers for SC, GIRD, and SUROM-TIE (no secondary header) telemetry packets using information from the PDB
- Generate instrument telemetry packets using secondary key information from the PDB
- Display EDU data when in IP mode
- Display CADU data when in Serial mode
- Set values into telemetry points by mnemonic and Parameter ID
- Display telemetry node values by mnemonic or Parameter ID
- Convert telemetry values to Engineering Units (EU) for display using information from the PDB
- Accept operator-entered telemetry values in EU and convert to Raw Counts for inclusion in telemetry packets
- Static packet data can be overwritten either by byte location or by modification of telemetry mnemonic
- Incrementing packet sequence counters per APID
- Generation of individual APIDs can be inhibited
- Telemetry logs can be created (viewable by offline utility)
- Packet Headers and Packet Data are updated
  - Packet Sequence Counters can be modified or reset
  - Packet Version, APID, Type, Secondary Header Flag, Length, and CCSDS Unsegmented TimeCode (CUC) can be modified

- Packet data can be shown in hexadecimal or octal format and addressed in hexadecimal or decimal form
- Scenario file (script) capability to set telemetry nodes and buffers
- Set initial telemetry data values at initialization
- The PDB Red/Yellow Limits file is used to refine initial telemetry values.
- Allow simultaneous display and set of multiple telemetry container items via GUI screens
- Simulate spacecraft memory dumps
- Maintain and update telemetry data values in APID 1000
- Telemetry values may be set using any combination of simple expressions, trigonometric expressions, Boolean expressions, and other telemetry mnemonic values
- Telemetry values may be saved in intermediate variables for later use
- Telemetry data values are validated for fit into packet space
- Current enable status and transmit rate for all APIDs is viewable via status display
- vcProcessor module discards VC63 VCDUs when creating files for playback
- The VCDU Sequence Counter field occupies 32 bits in APID 1000.
- Signed telemetry data values are validated as one's and two's complement integers upon user input, as appropriate.
- Displays of telemetry and command container item names may be saved and restored.
- Accept telemetry and CLCW packets from an external source in IP mode
- Update telemetry parameter values to reflect data received from the external source
- Update CLCW field values to reflect data received from the external source.
- Forward, via IP interface, the telemetry and CLCW packets received from the external source.
- Modify telemetry parameter values and CLCW field values in externally received packets prior to re-transmission, in response to operator directive.
- Test Hexadecimal numbers entered by the operator or via scenario script to see if they fit the parameter space as negative numbers, if the telemetry parameter is signed.

Command:

- Ingest command-related PDB files **directly from PDB flat files**
- Identify commands using information from the PDB
- Display event messages with command mnemonics and submnemonics
- Set telemetry points in response to commands received (end-item verification) using information from the PDB
- Use the PDB telemetry state text file to locate end-item verifier values
- Recognize spacecraft Command Loads
- Display Command Load data

- Copy Command Load data to a Memory Dump buffer (may be inhibited via operator directive)
- Validate checksums of received Command Loads
- Ingest type AD, BC, and BD commands
- Display count of Total CLTUs received (may be reset by operator)
- Display count of Rejected CLTUs received (may be reset by operator)
- Display Instrument commands count (may be reset by operator)
- Display Spacecraft commands count (may be reset by operator)
- Display BC commands count (may be reset by operator)
- Display BD commands count (may be reset by operator)
- Update command accepted and rejected counters in telemetry
- Display current Spacecraft and Instrument CLCW
- Update Spacecraft or Instrument CLCW upon command receipt
- Validate commands based on individual, all, or none of the following validation criteria: CLTU Start and Tail Sequences, BCH Error Code, Transfer Frame Header Fields, FARM (Valid Frame Sequence), User Command Packet Header
- Log raw commands (viewable by offline utility)
- Display raw command in hexadecimal or octal format addressed in either hexadecimal or decimal fashion
- Display command packet headers for spacecraft and instrument commands
- Command sub-mnemonics are saved in container items and may be viewed after command receipt
- Enable and disable automatic setting of end-item verifier telemetry points for commands received, in response to operator directive.

Time:

- Maintain and update SC time (GIRD)
- Maintain and update GMT time
- Synchronize SC and GMT times

General:

- Control all simulator module functions via scenario scripts
- Selection of scenario scripts may be via operator type-in or via a file selection browse window
- Start scenario scripts in response to commands received
- Start a scenario script from a scenario script
- Execute multiple scenario scripts simultaneously
- Provide operator control of multiple scenario scripts started by the operator
- Save the last 10 operator directives
- Allow editing of saved operator directives before re-execution
- EDOS Service Header (ESH) fields may be viewed
- ESH field contents may be modified by the operator

- Validation of Command Data Block (CDB) header fields of commands received
- Modification of expected values of CDB header fields
- All viewable buffers may be displayed
- Logs of commands received or telemetry transmitted may be retransmitted via IP output or Serial output
- Expected Spacecraft ID may be modified in EOSGS module
- CLCW ESH field contents may be modified by the operator
- Event messages to the screen may be inhibited or enabled by severity (color)
- Scenario scripts may contain IF-then-ELSE-ENDIF and WHILE-ENDWHILE conditional execution directives
- The Scenario module may interface with multiple modules
- Intermediate variables A – Z permit saving values as real numbers
- Intermediate variables Aq – Zq permit saving values as long integers
- The Aura PDB DFCD schema has been adopted
- The Serial Output module can accept directives from the operator or via a scenario script.
- The Event Message window has been separated from the project window and has been made resizable.

## **Attachment B – Installation Instructions for MPS/Aqua Release 6.7**

This attachment contains the instructions for installing the PDB files and the MPS/Aqua Release 6.7 Server and Client. The information presented in this attachment is divided into three major sections. The first section contains abbreviated installation instructions, the second contains a summary of the installation changes, and the third section contains detailed instructions for performing initial and subsequent installations.

**The abbreviated installation instructions assume that the user will install the Java Runtime Engine, JRE 1.2, Build 14, if it is not already installed.**

The information presented in this attachment has been checked for accuracy by the independent test team.

### **B-1: Abbreviated Installation Instructions**

These instructions are intended for the experienced user.

1. Install the Java Runtime Engine, Build 14, by selecting the file **jre-1\_2\_2\_014-windows-i586.exe** in the root folder of the CD and following the prompts.  
**IMPORTANT:** When prompted for an installation folder, modify the path to **C:\jre1.2.2**. See the detailed instructions for more information.
2. Install the MPS/Aqua Release 6.7 Client software by executing the **Setup.exe** program in the Client folder of the CD.
3. Install the MPS/Aqua Release 6.7 Server software by executing the **Setup.exe** program in the Server folder of the CD.
4. If not previously done, create a folder under **D:\mps\_pdb\PM1PDBs** to hold the Aqua PDB source files. Copy the Aqua PDB source files into this new folder. Twelve files are needed. See the list in Paragraph B-3.3 for the files to be copied.
5. When initializing the MPS/Aqua simulator for the first time, all Projects needed must be built and saved.

## **B-2: Summary of changes**

Patch Build 14 of Version 1.2.2 of the Java Runtime Engine (JRE) is being included with this delivery. Testing has shown that Sun Microsystems has fixed many of the resource leaks that were a problem with earlier versions of the JRE.

## **B-3: Detailed Installation Instructions**

This is the complete procedure for performing an initial or subsequent installation of the MPS/Aqua simulator Release 6.7, and associated software, data files, and COTS programs on a PC.

Materials Needed:

- One or more versions of the Aqua Project Data Base (PDB)
- The CD containing the MPS/Aqua Release 6.7 software

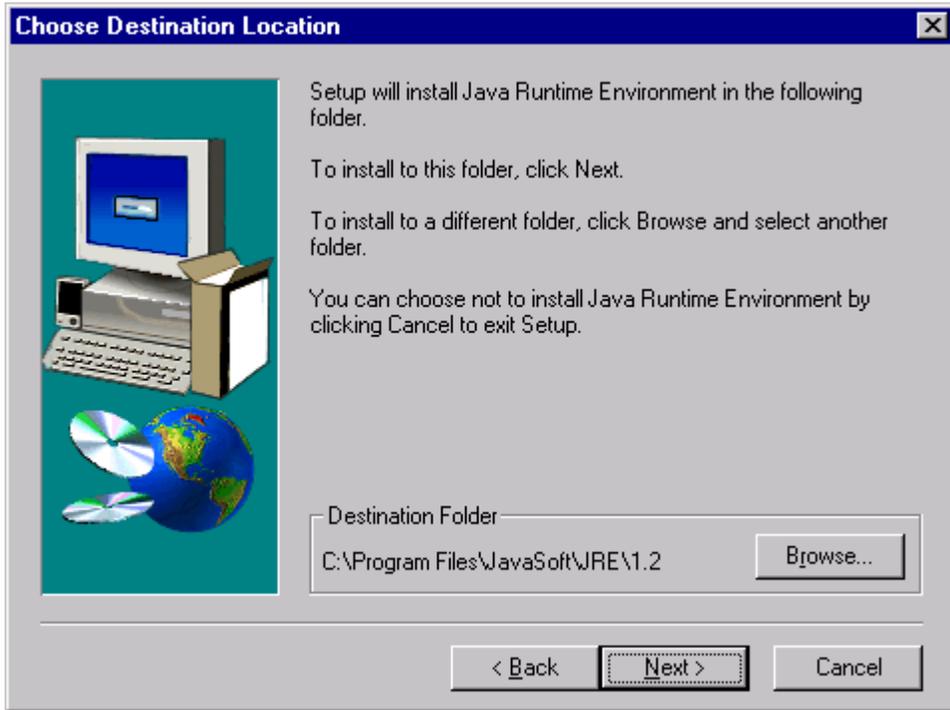
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### **B-3.1: Java Runtime Engine Installation**

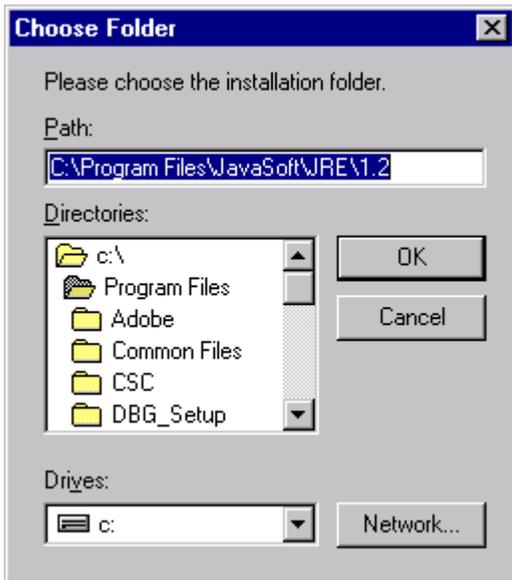
Patch Build 14 of Version 1.2.2 of the JRE is included on the delivery CD. It is recommended that this version of Java be installed.

1. Insert the CD containing the MPS/Aqua Release 6.7 into the CD drive and navigate to it using either Windows Explorer or My Computer.
2. Double-click on the file named **jre-1\_2\_2\_014-windows-i586.exe** in the root folder. This will cause the Java Runtime Engine to be installed. When responding to the installation prompts, set the installation folder to **C:\jre1.2.2** by modifying the installation path as shown in the following pictures. This is necessary because the DOS program that starts the Client software cannot parse spaces in the path.

When the “**Choose Destination Location**” window appears, click on the Browse button.



The result will be the following “**Choose Folder**” browse window:



Modify the path in the **Choose Folder** browse window to be **C:\jre1.2.2** as shown in the following picture. Select **OK**, then select **NEXT** from the **Choose Destination Location** window.



### **B-3.2: Installation of the Aqua Server and Client software**

The steps in this paragraph cause the MPS/Aqua Client and Server software to be installed on the PC.

1. Insert the delivery media into the appropriate drive.
2. To install the Aqua Client:
  - a) On the desktop, click on the Start button, and then select Run from the resulting menu.
  - b) When the Run window appears select the Browse... button.
  - c) From the Browse Window, select the Removable drive that contains the installation CD.
  - d) Click on the Client folder.
  - e) From within the Client folder, double click on the **Setup.exe** filename.
  - f) A window with the title "Run Window" will appear. Click on the Okay button to proceed to the next step.
  - g) The screen will be filled with an Aqua Client background and a smaller window with the title "Welcome to Aqua Client 6.7" will appear. Click on the Next button to proceed to the next step.
  - h) The next window will contain the licensing agreement. Click on Yes to accept the agreement and proceed.
  - i) After all of the files are copied, a window with the title "Setup Complete" will appear. Click on the Finish button to end.
  - j) An Aqua Client icon will now be installed on the desktop.

3. To install the Aqua Server:
  - a) On the desktop, click on the Start button, and then select Run from the resulting menu.
  - b) When the Run window appears select the Browse... button.
  - c) From the Browse Window, select the Removable drive that contains the installation CD.
  - d) Click on the Server folder.
  - e) From within the Server folder, double click on the **Setup.exe** filename.
  - f) A window with the title "Run Window" will appear. Click on the Okay button to proceed to the next step.
  - g) The screen will then be filled with an Aqua Server background and a window with the title of "Welcome to Aqua Server 6.7" will appear. Click the Next button to proceed.
  - h) The next window will contain the licensing agreement. Click on Yes to accept the agreement and proceed.
  - i) Next a window will show the completion status as the files are copied. When the copying is complete click on the Finish button to finish the installation.
  - j) An Aqua Server icon will be installed on the desktop.

### **B-3.3: PDB Download**

The next step is to copy the PDB onto the hard drive. You will need at least one version of the Aqua PDB. The following PDB flat files are needed, where *xxxxxx* corresponds to the version portion of the filename:

```
cmd_desc_XXXXXX.pdb
cmd_fixdata_XXXXXX.pdb
cmd_parm_XXXXXX.pdb
cmd_vardata_XXXXXX.pdb
cmd_verify_XXXXXX.pdb
t1m_calcurve_XXXXXX.pdb
t1m_desc_XXXXXX.pdb
t1m_dstate_XXXXXX.pdb
t1m_packet_XXXXXX.pdb
t1m_parm_XXXXXX.pdb
t1m_polyconv_XXXXXX.pdb
t1m_rylim_XXXXXX.pdb
```

Add a folder to your chosen directory structure to hold the source files of the Aqua PDB.

Copy the desired version of the PDB into the folder just created. If desired, more than one version of the PDB may be copied. Be sure to copy each version into its own folder.

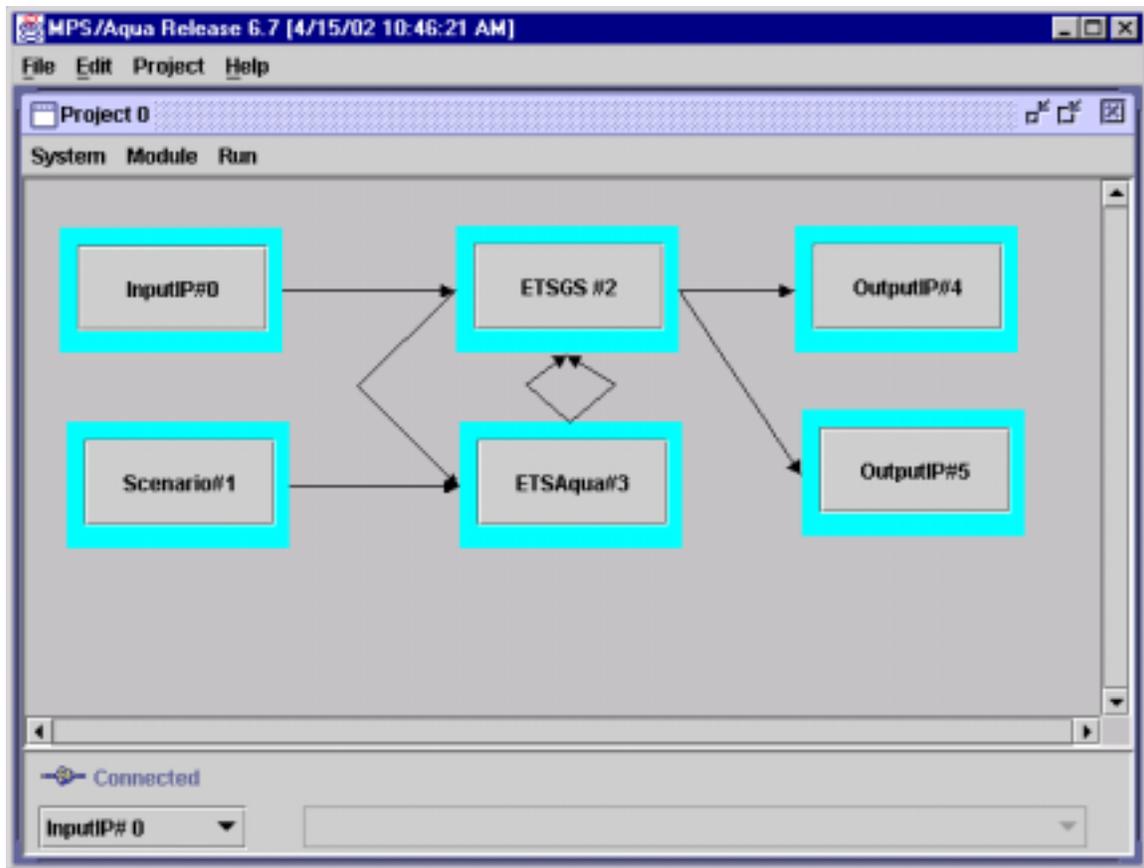
## Attachment C - Special Operating Instructions

This attachment contains special operating instructions for MPS/Aqua Release 6.7. The information presented in this attachment has been checked for accuracy by the independent test team.

A User's Guide is being updated to include the information presented in this section. The User's Guide will be available from the ETS home page at <http://esdis-it.gsfc.nasa.gov/ETS>.

### Executable File Name Changes

Updates in the Configuration Management repository have required name changes to the ETS-specific modules. The SCPM1 module has been renamed **ETSAqua** and the EOSGS module has been renamed **ETSGS**. The modules operate exactly as before, with the exception that **ETSAqua** does not require Oracle. The following picture shows a typical IP-mode Project.



## **Save and Restore of operating mode has been added to ETSAqua**

The ability to save the telemetry transmission mode has been added to the ETSAqua module. When a Project is being built, if other than the default mode is desired, click on the ETSAqua module and select the Configure option from the drop-down menu. The Simulation Mode defaults to IP telemetry transmission but may be changed to Serial mode and saved. The ETSAqua module will be in Serial mode when the Project is restored.

## **PDB Ingest**

With this release the Project Data Base (PDB) is no longer taken from the Oracle repository. Instead the PDB flat files are ingested directly into the simulator during initialization, or whenever the user wishes to change the PDB version in use.

The PDB flat files must be present on the PC hard disk, or in a reachable point of the network neighborhood. The following PDB flat files are needed, where *xxxxxx* corresponds to the version portion of the filename:

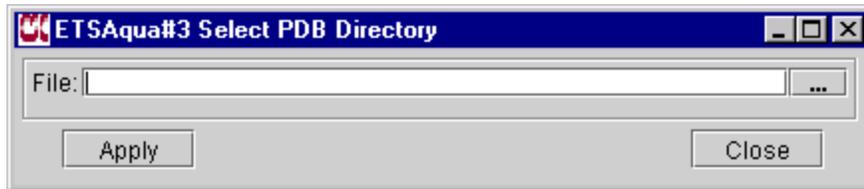
```
cmd_desc_xxxxxx.pdb
cmd_fixdata_xxxxxx.pdb
cmd_parm_xxxxxx.pdb
cmd_vardata_xxxxxx.pdb
cmd_verify_xxxxxx.pdb
tlm_calcurve_xxxxxx.pdb
tlm_desc_xxxxxx.pdb
tlm_dstate_xxxxxx.pdb
tlm_packet_xxxxxx.pdb
tlm_parm_xxxxxx.pdb
tlm_polyconv_xxxxxx.pdb
tlm_rylim_xxxxxx.pdb
```

It is suggested that these files be stored in a subfolder to the Server folder, or in a common area near the root folder, to make navigation easy.

**Note** that there should be only one version of the PDB files in any given folder. The ETSAqua code that loads the PDB files masks off the version portion of the filename when searching for the files to load. It will load the first file(s) encountered, which may not be the desired version.

Follow these steps to ingest the PDB at simulator initialization:

1. Create, or restore, a desired Project in the same manner as all previous releases.
2. When the **Configure/Load Database** option of the ETSAqua module menu is accessed, the **Select PDB Directory** window will appear:



3. Single-click on the Browser button, which is the button with three dots at the right. The **PDB File Browser** window, which appears as follows, will appear:



4. To locate the desired version of the PDB, move the Slider as necessary and single-click folder names until the folder containing the PDB files is located. To move up the directory structure, single-click the folder with two dots as its name. Single-click the folder containing the PDB files, then click **Apply**. The **PDB File Browser** window will disappear.
5. Ensure that the complete path to the PDB folder appears in the **Select PDB Directory** filename field, then click **Apply** followed by **Close**.

The PDB files will be read in and internal tables created. A series of messages indicating progress at reading the files will be displayed in the Event Log window. If any messages indicate Warnings or Errors, more informational messages will be written to the Event Log disk file.

A different version of the PDB may be loaded into the simulator without completely stopping it. To load a new PDB version, select the **STOP** option followed by the **UNLOCK** option from the **RUN** menu. Then follow steps 2 through 5 above. Then restart the simulator.

The same PDB version may not be reloaded from the same folder. If it is desired to reload the same PDB version, such as after making a change in one or more of the files, copy all of the PDB files to a new folder, make the desired changes, and reload from there.

### **New Scenario File Browser**

The Scenario module has a new file browser, the Java-supplied JfileChooser. It has a slightly different look from the original browser. In addition, you must double-click to navigate folders and choose scenario file names.

## Attachment D – Resolved Discrepancy Reports

The following Discrepancy Reports (DRs) and Change Requests (CRs) have been closed by and are being delivered with MPS/Aqua Release 6.7. The DRs/CRs are listed in the table below, which provides the DR/CR Number, Status, Severity, and a short description. A full description of each DR/CR follows the summary table. Complete information on all DRs/CRs may be accessed via the Internet at address <http://edosultra30.gsfc.nasa.gov/ddts>.

### Summary of Closed Discrepancy Reports

| <b>Critical (Severity 1)</b> | <b>Urgent (Severity 2)</b> | <b>Routine (Severity 3)</b> | <b>Change Requests</b> | <b>Total</b> |
|------------------------------|----------------------------|-----------------------------|------------------------|--------------|
| 0                            | 1                          | 0                           | 0                      | 1            |

### Status Definitions

|                           |                       |                      |
|---------------------------|-----------------------|----------------------|
| N – New                   | A – Assigned Analysis | R – Analysis Entered |
| V – Assigned Verification | T – Tested            | C – Closed           |
| W – Withdrawn             | P – Postponed         | X – Duplicate        |

| <b>ETS No.</b> | <b>SMO No.</b> | <b>Type</b> | <b>Severity</b> | <b>Description</b>                                |
|----------------|----------------|-------------|-----------------|---|
| ETS0451        | SMOdr14926     | DR          | 2               | Slowness of Command Recognition is due to Oracle. |

DR: SMOdr14926 (ETS0451)      Related NCR:      Submitted: 020208  
Status: ASSIGNED-ANALYSIS      Class: ETS      Asgnd-Analysis: 020329

Title: Slowness of Command Recognition is due to Oracle

SUBMITTAL INFORMATION

Project                    ETS  
DR Type:                Problem  
Rel/Ver:                6.5  
Subsystem:              MPS-PM/Aqua  
Module:                 Simulator  
Affected-Requirement:        
Test Phase:             in-field use  
Severity:                2  
Date found:             020206  
Location:                GSFC  
Submitter:              Ernest Quintin  
Organization:            ETS Dev Group  
Phone number:           301-805-3649  
Email:                    equintin@csc.com

ANALYSIS INFORMATION

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Date due (Sev=1,2):

\*\*\*\*\* Problem (Added 020208 by equintin) \*\*\*\*\*

Raytheon personnel at Denver reported that command recognition by MPS/Aqua has become too slow.

Testing has revealed that the Oracle database interface can support no more than two records per query, due to the size of the array records. This means that many queries must take place for every command received, slowing the entire simulator.

It is recommended that dependence upon Oracle as a PDB repository be removed from online operation of the simulator.

## Attachment E – System Limitations

### E.1 MPS/Aqua Release 6.7 Limitations

The following limitations apply to MPS/Aqua Release 6.7. Some of these are Discrepancy Reports (DRs) against SIMSS baseline products and have been recorded in their DR repository.

| <b>Problem Description</b>  | <b>Workaround</b>  |
|---|--|
| The event message window can accept no more than 50 messages per second. The Scenario module can easily overrun this limit and flood the GUI with messages.   | If the display of Event messages from scenario script execution is desired, use Sleep directives to slow scenario files to 50 directives per second or less.   |
| The negate operator does not always work correctly in scenario scripts. e.g. if <code>!(A==0)</code> if true, then <code>!(!(a==0))</code> should be false. <i>This is SIMSS defect #325.</i>   | Avoid use of double negation.  |
| The Scenario module File Selection windows for Scenario Control #2, #3, #4, and #5 occasionally will not navigate to subfolders. This is most often true when a script is running in one of the windows from another subfolder.   | Scenario Control #1 is the master control for navigation. If any of the others will not navigate properly, then use Control #1 to set the path. Therefore it is advisable to never run a long term script in Control #1. |
| The Save Project (Extended) and Restore From (Extended) options are intended for another application where a remote server runs simultaneously with the local application. The options are included with MPS/Aura so that only one version of the NeTTCore code needs to be maintained. | Avoid use of the Save Project (Extended) and Restore From (Extended) options.  |
| The Generic Container Buffer display is limited to 1400 bytes of data (= 700 words, or 350 double words). A request for more data than that will result in a display of 1400 bytes of information. <i>This is SIMSS Defect # 102.</i>   | To view data that is beyond byte 1400 of the buffer, set the offset to 1400, or as required to view the data.  |

**Attachment F - Release History Summary Matrix**

Attached is the release history summary matrix, which reflects the MPS/Aqua Release 6.7 delivery. Modules inherited from the SIMSS baseline have the SIMSS Release Number, while the MPS/Aqua modules ETSGS and ETS Aqua have the current MPS/Aqua Release Number. At the time of the Release 3.1 delivery, the SIMSS modules had been entered into the StarTeam Configuration Management facility and renumbered.

## Release History Summary Matrix

**System: MPS/Aqua**

| Release Number                 |        | 1.0     | 1.1    | 2.0     | 2.1      | 2.2      | 3.0      | 3.1     | 4.0     | 5.0     | 5.1     | 6.0 Beta | 6.0 Beta Update 1 |
|--------------------------------|--------|---------|--------|---------|----------|----------|----------|---------|---------|---------|---------|----------|-------------------|
| Delivery Date                  |        | 7/30/99 | 9/2/99 | 9/24/99 | 10/25/99 | 11/18/99 | 12/17/99 | 1/21/00 | 3/17/00 | 5/12/00 | 6/22/00 | 7/28/00  | 9/14/00           |
| Configuration Item             | CI No. |         |        |         |          |          |          |         |         |         |         |          |                   |
| Core (Client)                  | 1.1    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Core (Server)                  | 1.2    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| SC-PM1 (Client)                | 1.3    | 1.0     | 1.1    | 2.0     | 2.1      | 2.2      | 3.0      | 3.1     | 4.0     | 5.0     | 5.0     | 6.0      | 6.0               |
| SC-PM1 (Server)                | 1.4    | 1.0     | 1.1    | 2.0     | 2.1      | 2.2      | 3.0      | 3.1     | 4.0     | 5.0     | 5.1     | 6.0      | 6.0               |
| GS (Client)                    | 1.5    | 1.0     | 1.1    | 2.0     | 2.1      | 2.2      | 3.0      | 3.1     | 4.0     | 5.0     | 5.0     | 6.0      | 6.0               |
| GS (Server)                    | 1.6    | 1.0     | 1.1    | 2.0     | 2.1      | 2.2      | 3.0      | 3.1     | 4.0     | 5.0     | 5.0     | 6.0      | 6.0               |
| IP Input (Client)              | 1.7    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| IP Input (Server)              | 1.8    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| IP Output (Client)             | 1.9    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| IP Output (Server)             | 2.0    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Logging (Client)               | 2.1    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Logging (Server)               | 2.2    | 1.0     | 1.0    | 2.0     | 2.0      | 2.0      | 3.0      | 1.0     | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Scenario (Client) <sup>1</sup> | 2.3    |         |        |         |          |          |          |         | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Scenario (Server) <sup>1</sup> | 2.4    |         |        |         |          |          |          |         | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |

<sup>1</sup> New in Release 4.0

|                                     |        |         |        |         |          |          |          |         |         |         |         |          |                   |
|-------------------------------------|--------|---------|--------|---------|----------|----------|----------|---------|---------|---------|---------|----------|-------------------|
| <b>Release Number</b>               |        | 1.0     | 1.1    | 2.0     | 2.1      | 2.2      | 3.0      | 3.1     | 4.0     | 5.0     | 5.1     | 6.0 Beta | 6.0 Beta Update 1 |
| <b>Delivery Date</b>                |        | 7/30/99 | 9/2/99 | 9/24/99 | 10/25/99 | 11/18/99 | 12/17/99 | 1/21/00 | 3/17/00 | 5/12/00 | 6/22/00 | 7/28/00  | 9/14/00           |
| <b>Configuration Item</b>           | CI No. |         |        |         |          |          |          |         |         |         |         |          |                   |
| Serial Input (Client) <sup>1</sup>  | 2.5    |         |        |         |          |          |          |         | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Serial Input (Server) <sup>1</sup>  | 2.6    |         |        |         |          |          |          |         | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Serial Output (Client) <sup>1</sup> | 2.7    |         |        |         |          |          |          |         | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |
| Serial Output (Server) <sup>1</sup> | 2.8    |         |        |         |          |          |          |         | 1.0     | 1.1     | 1.1     | 2.0      | 2.0               |

## Release History Summary Matrix, Continued

**System:**        **MPS/Aqua**

| Release Number                             |        | 6.0     | 6.1      | 6.2    | 6.3      | 6.4      | 6.5      | 6.6     | 6.7    |  |  |  |  |
|--|--------|---------|----------|--------|----------|----------|----------|---------|--------|--|--|--|--|
| Delivery Date                              |        | 9/28/00 | 11/17/00 | 2/9/01 | 06/15/01 | 07/03/01 | 10/26/01 | 2/22/02 | 4/4/03 |  |  |  |  |
| Configuration Item                         | CI No. |         |          |        |          |          |          |         |        |  |  |  |  |
| Core (Client)                              | 1.1    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Core (Server)                              | 1.2    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| ETSAqua (Client)<br>Formerly SC-PM1        | 1.3    | 6.0     | 6.0      | 6.2    | 6.3      | 6.4      | 6.5      | 6.6     | 6.7    |  |  |  |  |
| ETSAqua (Server)<br>Formerly SC-PM1        | 1.4    | 6.0     | 6.0      | 6.2    | 6.3      | 6.4      | 6.5      | 6.6     | 6.7    |  |  |  |  |
| ETSGS (Client) <sup>2</sup><br>Formerly GS | 1.5    | 6.0     | 6.0      | 6.0    | 2.0      | 2.0      | 3.0      | 3.0     | 3.0    |  |  |  |  |
| ETSGS (Server) <sup>2</sup><br>Formerly GS | 1.6    | 6.0     | 6.0      | 6.0    | 2.0      | 2.0      | 3.0      | 3.0     | 3.0    |  |  |  |  |
| IP Input (Client)                          | 1.7    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| IP Input (Server)                          | 1.8    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| IP Output (Client)                         | 1.9    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| IP Output (Server)                         | 2.0    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Logging (Client)                           | 2.1    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Logging (Server)                           | 2.2    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |

<sup>2</sup> In Release 6.3 the Aura/EOSGS module replaced the Aqua/GSPM1 module. In Release 6.7, the module is being renamed as ETSGS.

| Release Number                          |        | 6.0     | 6.1      | 6.2    | 6.3      | 6.4      | 6.5      | 6.6     | 6.7    |  |  |  |  |
|---|--------|---------|----------|--------|----------|----------|----------|---------|--------|--|--|--|--|
| Delivery Date                           |        | 9/28/00 | 11/17/00 | 2/9/01 | 06/15/01 | 07/03/01 | 10/26/01 | 2/22/02 | 4/4/03 |  |  |  |  |
| Configuration Item                      | CI No. |         |          |        |          |          |          |         |        |  |  |  |  |
| Scenario (Client)                       | 2.3    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Scenario (Server)                       | 2.4    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Serial Input (Client)                   | 2.5    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Serial Input (Server)                   | 2.6    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Serial Output (Client)                  | 2.7    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| Serial Output (Server)                  | 2.8    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| TxFile (Client) <sup>3</sup>            | 2.9    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| TxFile (Server) <sup>3</sup>            | 3.0    | 2.0     | 2.0      | 4.0    | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| vcProcessor (Client) <sup>4</sup>       | 3.1    |         |          |        | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| vcProcessor (Server) <sup>4</sup>       | 3.2    |         |          |        | 4.1      | 4.1      | 5.0      | 6.0     | 8.0    |  |  |  |  |
| AVTECSerialInput (Client) <sup>5</sup>  | 3.3    |         |          |        |          |          |          |         | 8.0    |  |  |  |  |
| AVTECSerialInput (Server) <sup>5</sup>  | 3.4    |         |          |        |          |          |          |         | 8.0    |  |  |  |  |
| AVTECSerialOutput (Client) <sup>5</sup> | 3.5    |         |          |        |          |          |          |         | 8.0    |  |  |  |  |
| AVTECSerialOutput (Server) <sup>5</sup> | 3.6    |         |          |        |          |          |          |         | 8.0    |  |  |  |  |

<sup>3</sup> New in Release 6.0

<sup>4</sup> New in Release 6.3

<sup>5</sup> New in Release 6.7



**Attachment G — Mission Systems Configuration Management Form**

This attachment contains the completed Mission Systems Configuration Management (MSCM) form for the delivery of MPS/Aqua Release 6.7.

**Mission Systems Configuration Management Form**

|  |                                  |   |  |
|--|----------------------------------|---|--|
| <u>1. ORIGINATOR</u><br>Estelle Noone  | <u>2. ORGANIZATION</u><br>CSC    | <u>3. PHONE</u><br>301-805-3653   | <u>4. E-MAIL ADDRESS</u><br><a href="mailto:enoone@csc.com">enoone@csc.com</a> |
| <u>5. ELEMENT</u><br>ETS (MPS/Aqua)  |                                  | <u>6. INSTALLATION PRIORITY</u><br>Routine  | <u>7. TRACKING NUMBER</u><br>(Assigned by CM Office)                           |
| <u>8. SOURCE CHANGE REQUEST(S):</u><br>ETS delivery of MPS for EOS PM-1 (MPS/Aqua)   |                                  | <u>9. APPROVALS</u><br>Element Manager _____ / /<br>Flight Ops Director _____ / /<br>Operations Manager _____ / / |  |
| <u>10. DELIVERED SYSTEM</u> (Check all that apply)   |                                  |   |  |
|  | Name                             | Version   | Media Identification   |
| <input type="checkbox"/> Hardware  | _____                            | _____   | _____  |
| <input checked="" type="checkbox"/> Software   | <u>MPS/Aqua</u>                  | <u>R6.7 BETA</u>  | <u>CD-ROM</u>  |
| <input type="checkbox"/> Database  | _____                            | _____   | _____  |
| <input checked="" type="checkbox"/> Documentation:   |                                  |   |  |
|  | <u>MPS/Aqua delivery package</u> | <u>N/A</u>  | <u>via email</u>   |
|  | _____                            | _____   | _____  |
|  | _____                            | _____   | _____  |
| <input type="checkbox"/> Other   | _____                            | _____   | _____  |
| <u>11. CHANGE DESCRIPTION</u><br><u>BETA Release 6.7 of MPS/PM-1 (MPS/Aqua)</u><br>_____<br>_____  |                                  |   |  |
| <u>12. ATTACHMENT(S):</u> Check if YES <input checked="" type="checkbox"/><br>Description: <u>MPS/Aqua Release 6.7 BETA delivery package (cover letter with attachments) dated 4/4/03</u><br>_____ |                                  |   |  |
| <u>13. CM OFFICE USE</u>   |                                  |   |  |
|  | Location (Bldg/Room)             | Slot location(s)  |  |
| Hardware   | _____ / _____                    | _____   |  |
| Media  | _____ / _____                    | _____   |  |
| Documentation  | _____ / _____                    | _____   |  |
| Installation date  | _____ / _____ / _____            | CM Office Signature _____   |  |

Form MSCM (970327)