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Gravity Probe B Relativity Mission

Operational Procedure for
Baseline and Regression Testing of Auto Import

P1078 Rev -
3/18/2004

Approvals

NAME	SIGNATURE	DATE
Samantha Patterson *Software Engineer*		
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Required Signatures prior to Execution

NAME	SIGNATURE	DATE
NAME: *Test Engineer*		
Kelly Burlingham *Software Quality Engineer*		

Tom Langenstein ITAR Assessment Performed, ITAR Control Req'd?   ___ Yes   ___ No

_____

Table of Contents:

1 REVISION HISTORY

REV	DATE	AUTHOR	COMMENTS
-	18 Mar 2004	SAP	initial version

2 SCOPE

This Test Plan Document details the auto import software package and how to both baseline and regression test it.

3 OPERATIONAL PERSONNEL

Jennifer Spencer
Samantha Patterson
Qualified QA Rep: Kelly Burlingham

4   QUALITY ASSURANCE PROVISIONS

4.1   Notification

Quality Assurance must be given 24 hour notification before this test is run; presence is at their discretion.

QA Notified Date & Time: _____ By: _____
QA Initials: _____

4.2   Red-Line Authority

Authority to red-line (make minor changes during execution) this procedure is given solely to the test engineer, and shall be approved by QA.

5   RISKS & CONSTRAINTS

5.1   Hardware and Software Requirements

Operations are performed on the Sun server machine known as "science" or "moc-server". This application require that sybase be running and the GPB_L0, GPB_L1 and GPB_L1A databases are available for reading.

5.2   Configuration Requirements

The operator must be logged into the server as a user in the group 'users'. The user should reserve a directory for test data and save this data for QA.

Directory: _____

5.3   Constraints

Constraint	Risk
L0 & L1 databases online	This system accesses the GPB_L0, GPB_L1 and GPB_L1A databases. All must be accessible.

6   REFERENCE DOCUMENTS

Document No.	Document
S0331	Data Management Plan
S0401	Stanford Post-Processing Operations for Science Mission Data
S0476	MOC Configuration Control, IONET LAN
S0613	TDP/TCAD Software Release (Design Document)
P0826	Telemetry Data Processing (TDP) in the Non-Real-Time System

7   SOURCE CODE PATH ON SCIENCE/MOC

This software is installed under the apps/supported/lasp-X.X/src directory structure at SU on the science and moc network.

7.1   /auto_import

Program files and versions are as follows:

File	SCCS Version
auto_import.exp	
defaults.exp	
initialize.exp	
filecheck.exp	
idl_routines.exp	
network.exp	
sql_routines.exp	
proc_handling.exp	
archive.exp	
dparchive.exp	
dpreport.exp	
logbook_reports.exp	
mail_summaries.exp	

8   TEST ENVIRONMENT

This software is tested on the science and moc server at SU under the following configuration:

Software Configurations	Configuration Number (fill in)
IDL Version	
Sybase ASE	
Server (indicate moc or science)	

9   OPERATING SYSTEM

This section describes the other software that is required to be in place for implementation of this delivery.

Operating System	Minimum Version	Description
Solaris Operating System	2.8	SUN's UNIX operating system.

10 TEST CASES FOR AUTO IMPORT

If the date or RCS Version on any of the following files has changed, the tests in the corresponding section number must be run and checked off for verification. Throughout all phases of testing, all constraints (specified in section 4 of this document) must be met. Additional constraints may be set on an individual test case basis as noted in the Test Sections below.   The objective of testing in auto import is to confirm that the data

processed to TDP automatically is done as it would be by an operator, and that all modules of auto import respond without causing processing to inappropriately stop.

LASP version being tested: _____

File	Test Name
auto_import.exp	AI PRERUN
defaults.exp	AI PRERUN
initialize.exp	AI PRERUN
filecheck.exp	AI MAIN
idl_routines.exp	AI MAIN
network.exp	AI MAIN
sql_routines.exp	AI MAIN
proc_handling.exp	AI MAIN
archive.exp	AI WEB
dparchive.exp	AI WEB
dpreport.exp	AI WEB
logbook_reports.exp	AI LOGBOOK
mail_summaries.exp	AI MAIL

10.1 AI PRERUN: Auto Import general functionality

❑ (B)   ❑ (R)

Test Case Verification Number: AI PRERUN

INTRODUCTION
This test is a toplevel check of auto_import's general functionality and configuration. The startup for this tool has a lot of built-in flexibility because user requirements change frequently.   In the auto_import file **defaults.exp**, any variable in the VARS structure which is named in all upper-case may be changed with a command-line flag. –VARNAME will set the variable to 1. –VARNAME=value will set the variable to the value. Strings may be quoted, the variable name on the command-line is case insensitive.

APPROACH
Use Unix tools, run tests with dummy files and in check-only mode.

FEATURES TO BE TESTED
❑ Syntax message.
❑ Default configuration file settings.
❑ Setting flags on the command line.

FEATURES NOT TO BE TESTED
- Functionality of flags.

BASELINE TESTS
   i.   ls –l the defaults.exp file. The user tdp should be able to modify this file.
   ii.   Run auto_import with no parameters.
   iii. Run auto_import with a time of 0 and a bogus command-file name.
   iv. Repeat step 2 but add various flags. Non-default settings should be echoed to the screen. (compare with defaults.exp as needed)
   v.   Create a dummy command-file (touch /tmp/junk). Use this command file and a time of 1 and run auto import. (CTRL-C out of this after satisfied it is sleeping)

BASELINE TEST PASS CRITERIA
   i.   defaults.exp file is editable by tdp user.
   ii.   Syntax message is displayed.
   iii. Flagged variables are echoed to screen.
   iv. No file given causes warning message.
   v.   When a delay is given, program sleeps after pre-run processing.

REGRESSION TESTS
   i.   Attempt to run program with dummy command file, some flagged options, and a delay time.

REGRESSION TEST PASS CRITERIA
Flags are echoed, delay occurs for both the new and old code versions.

RESULT: PASS FAIL (circle one)   _____ initials

10.2 AI MAIN: Auto Import data processing

❑ (B)   ❑ (R)

Test Case Verification Number: AI PRERUN

INTRODUCTION
This section addresses the core functionality of the application: processing data.

APPROACH
Unless otherwise indicated, tests should be performed with the following flags set to improve performance time and reduce database risk.

    -co_0 –co_1 –snaps=0 –postcheck=0 –tando=0

Extreme care should be taken with this section. There are several safety features in place, but if not typed as above, the tester CAN affect L0 and L1 data accidentally.

It is advisable to run the Unix 'script' command prior to starting testing so that there will be a complete log of the auto_import process. Additionally, set the VARS(user_list) variable to the name of the tester ONLY (thus preventing mailing the entire user community).

FEATURES TO BE TESTED
- ❑ Safety features for data integrity.
- ❑ Use of flags.
- ❑ Alternate paths.

FEATURES NOT TO BE TESTED
- • Ancillary reports (push to web, logbook entries, etc)

BASELINE TESTS
  i.   Generate a space-delimited command file with data from an existing cycle
  ii. Run
       auto_import.exp 0 <command_file> -co_0 –co_1 –snaps=0 –postcheck=0 –tando=0 –splice=0
  iii. Test both yes and no answers encountered.
  iv. Rerun steps i-iii with the addition of the '-auto' flag.
  v.   Generate a command file where the data is from a time range different from the time range of the cycle. Re-run steps i-iii.
  vi. Create a command file with a dataset known to have splices and some bogus time ranges (functional test data). Issue the following command:
       auto_import.exp 0 <command_file> -co_0 –co_1 –snaps=0 –postcheck=0 –tando=0
       When prompted, read the .is_exp and answer yes or no to the questions accordingly based on splice information.
  vii. Rerun the previous test with the addition of the '-auto' flag.
  viii. Create a junk data file in the /apps/supported/lasp/data directory and immediately run auto_import 0 <command_file> -co_0 –co_1 –snaps=0 –postcheck=0 –tando=0 –splice=0
  ix. Create a command file with legitimate data for two or more different cycles.
  x.   Add an invalid MSSID to the line in the command file.
  xi. Select known good, and known previously fully imported data for a cycle OR select a dummy cycle. Run auto_import without additional processing flags EX:
       auto_import.exp 0 <cmd_file>
       Make note of the run time.   TIME:_____

BASELINE TEST PASS CRITERIA

i.   In manual mode, user is prompted to ask if they wish to import data into an existing cycle.
ii.   In auto mode, the user is not prompted about importing data into an existing cycle.
iii.   A time difference warning is generated and import is aborted.
iv.   In manual mode, when splice data is present, user is prompted about which splices to run.
v.   In auto mode, a file containing large time jumps is skipped.
vi.   When a current file is present in the data import directory, the user is prompted with a yes/no about using the directory.
vii.   When different cycles are imported, data is sent to the correct cycle.
viii. File is skipped if MSSID is invalid.
ix.   Data processing completes normally.

REGRESSION TESTS
i.   Run an import with all the disable flags for an existing cycle.
ii.   Run an import with none of the disable flags using either already processed data or a dummy cycle. Make note of the run time.
       TIME:_____

REGRESSION TEST PASS CRITERIA
i.   Disabled actions be have as expected.
ii.   Data processing completes normally.

RESULT: PASS FAIL (circle one)   _____ initials

10.3 AI WEB: Data summaries on the web.

❑ (B)   ❑ (R)

Test Case Verification Number: AI WEB

INTRODUCTION
After either the baseline or regression test of section 10.2, entries should have been put on the internet. The time recorded in 10.2 will be used correlate the actual data with the internet files.

APPROACH
Visual inspection.

FEATURES TO BE TESTED
   ❑ Data processing reports on the web.

FEATURES NOT TO BE TESTED
   • Quality of data.

BASELINE TESTS
   i.   From GPBOPS1 go to the /var/www/published/prod/htdoc/dp directory.
   ii.   Look for file(s) created slightly later than the start of the test process in section 10.2 in the L0_Summary, and L1_Summary directories. View contents of these files.
   iii.   Connect to https://gpbops.stanford.edu/ Data Processing section and look at the L0 and L1 summaries.

BASELINE TEST PASS CRITERIA
   i.   File(s) exist and are readable by 'other' but not writable or executable by 'other'.
   ii.   Files are non-zero in size and contain summary reports matching the data that was imported in step 10.2
   iii.   The L0 and L1 summaries appear where they should on the outside website and contain the correct data.
   iv.   Visually, the files on gpbops and gpbops1 match.

REGRESSION TESTS
   i.   Verify that new summaries were sent to the outside web server (https://gpbops.stanford.edu/) when step 10.2 was run.

REGRESSION TEST PASS CRITERIA
   Files are on web.

RESULT: PASS FAIL (circle one)   _____ initials

10.4 AI LOGBOOK: Data summaries in logbook.

❑ (B)

Test Case Verification Number: AI LOGBOOK

INTRODUCTION
After either the baseline or regression test of section 10.2, entries should have been sent to the logbook. The time recorded in 10.2 will be used correlate the actual data with the logbook entries.

APPROACH
Visual inspection.

FEATURES TO BE TESTED
   ❑ Data processing to logbook.

FEATURES NOT TO BE TESTED

- Mail and web messages.
- Quality of data.

BASELINE TESTS
  i.   Start TQSM.
  ii. View data import entry.

BASELINE TEST PASS CRITERIA
  i.   Timestamp on entry is consistent with expected time of entry per test 10.2.
  ii. Text of entry contains the L0, L1, and Limits summaries.

   RESULT: PASS FAIL (circle one)   _____ initials

10.5 AI MAIL: Data summaries to e-mail.

❑ (B)

Test Case Verification Number: AI MAIL

INTRODUCTION
After either the baseline or regression test of section 10.2 a message should have been mailed to the users defined in the VARS(user_list) variable. The time recorded in 10.2 will be used to match the mail to the processing.

APPROACH
Visual inspection.

FEATURES TO BE TESTED
   ❑ Mailed summaries.

FEATURES NOT TO BE TESTED
- Logbook and web messages.
- Quality of summary.

BASELINE TESTS
  i.   Look at VARS(user_list) in defaults.exp. As one of the users in the list, open mail client. Get new messages. Compare e-mailed log messages with web summary.

BASELINE TEST PASS CRITERIA
  i.   Summaries are consistent.
  ii. For a file with multiple splices, they are all comprised into a single e-mail. An overall start and end time is at the top of the mail message.

11 COMPLETION OF P1078:

ALL TESTING PASSED (CIRCLE ONE): YES – PASSED   NO

SOFTWARE RELEASE ALLOWED: YES   NO

CONDITIONS/NOTES (IF ANY):

_____
_____
_____
_____
_____
_____
_____

QA Review of process _____ Date: _____

TEST RUN BY (signature)_____ Date: _____

12 GLOSSARY

This section contains an alphabetic list and definitions of all acronyms used in the document, all proper nouns, and any words used in a non-standard way.

Word	Detail
CSCI	Computer Software Configuration Item
LASP	Laboratory for Atmospheric and Space Physics, University of Colorado
moc-server	Host name of the SUN computer that is the primary server for the MOC.
science server	Host name of the SUN computer which is the primary server for science LAN
SAFS	Standard Autonomous File Server (GSFC facility)
TCAD	Telemetry Checking, Analysis, and Display
TDP	Telemetry Data Processing
Startup window	The window containing the Unix command line from which TCAD was started