



Deep Impact – Integration and Test Instrument

Document/Drawing Approval Sheet

Ver. 11/09/01 TT

DATE: 11/21/2002 CII: INDIAH DOCUMENT NO.: 576699 REV.: -

DOC. TITLE: CSTOL: Deep Impact HRI Simultaneous VIS/IR Imaging Sequence PROJECT CODE: 21099

Functional Discipline	Primary Signature		Alternate Signature		Signature	Date Signed
*** Prep By	B. Smith x4049				<i>[Signature]</i>	02/11/21
*** Resp. Eng	D. Hampton x5473				<i>[Signature]</i>	02/11/21
I&T	L. Hunter x6922		T. Torphy x5991		<i>[Signature]</i>	02/11/22
Sys. Engr.	D. Hampton x5473		M. Huisjen x4486		<i>[Signature]</i>	02/11/21
Quality	J. King x5616		D. Pinkley x4498		<i>[Signature]</i>	2002/11/22
Software QA	S. Nissen x5998		D. Pinkley x4498		N/A	/ /
System Safety	J. Zynsky x6711		D. Pinkley x4498		N/A	/ /
Production	D. Mackey x5042		J. Houlton x6019		N/A	/ /
Mat'l and Process	M. Renbarger x5134		C. Magurany x6289		N/A	/ /
Thermal	J. Ferguson x6381		J. Valdez x6738		N/A	/ /
Structural	D. Morales x6505		J. Girard x5492		N/A	/ /
Environmental Eng.	L. Trilling x4867		D. Pinkley x4498		N/A	/ /
Software	K. Hansen x5028		B. Natker x4505		<i>[Signature]</i>	02/11/21
Mechanical Design	T. Yarnell x5483		J. Hoos x5744		N/A	/ /
Electrical Design	C. Varner x4921				<i>[Signature]</i>	02/11/21
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C&DM	W. Anderson x4115		C. Hunsaker x5795			/ /
Final Release						/ /

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GSFC STI PUBLIC DISCLOSURE EXPORT CONTROL CHECKLIST

Title: Deep Impact - Integration and Test Instrument - Document No: 576699

Instructions – This checklist is used for the disclosures of STI, and ITAR or EAR controlled information.

For STI (scientific and technical information) disclosures subject to NPG 2200.2 (Guidelines for Documentation, Approval, and Dissemination of STI), this checklist should be forwarded with the NASA Form 1676 (NASA Scientific and Technical Document Availability Authorization (DAA)). For all other ITAR (International Traffic in Arms Regulations, 22 CFR 120-130) and EAR (Export Administration Regulations, 15 CFR 730-774) disclosures, this checklist should be forwarded with a copy of the information to the GSFC Export Control Office for review/approval. Completion of this checklist should minimize delays in approving most requests.

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Generally, the export of information pertaining to the design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles (e.g., space flight hardware, ground tracking systems, launch vehicles to include sounding rockets and meteorological rockets, radiation hardened hardware and associated hardware and engineering units for these items) are controlled by the State Department under the ITAR. The export of information with respect to ground based sensors, detectors, high-speed computers, and “dual use” (military/commercial) technology items are controlled by the Commerce Department under the EAR. A complete listing of items covered by the ITAR and the EAR can be accessed at <http://export.gsfc.nasa.gov>. If the information intended for release falls within the above categories but fits into one or more of the following exemptions, the information may be released.

EXEMPTION I – Public domain information

If your information is already in the public domain in its entirety through a non-NASA medium and/or through a NASA release previously approved by any NASA Export Control Office, the information is exempt. If the information falls into this category, you may attest that you are using this exemption by signing below.

Print Name and Code

Signature

Date

EXEMPTION II – Scientific data

If your information pertains exclusively to the release of scientific data (e.g., data pertaining to studies of clouds, soil, vegetation, oceans, planets, stars, galaxies and the universe) without the disclosure of information pertaining to articles controlled by the ITAR or EAR, such as flight instruments, high-speed computers, or launch vehicles, the information is exempt. If the information falls into this category, you may attest that you are using this exemption by signing below.

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Date



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GSFC STI PUBLIC DISCLOSURE EXPORT CONTROL CHECKLIST *CONTINUED*

EXEMPTION III – General purpose information

If your information falls into the ITAR or EAR areas of concern as referenced above, but is offered at a general purpose or high level (e.g., poster briefs and overviews) where no detailed technical information (e.g., design, development, production, or manufacturing) pertaining to ITAR or EAR controlled items is offered, the information is exempt. If the information falls into this category you may attest that you are using this exemption by signing below.

Edwin J Grayzeck 690.1

Edwin J Grayzeck

Sept 28, 2005

Print Name and Code

Signature

Date

EXEMPTION IV – Software safety and assurance methodologies

If your information pertains exclusively to the release of software safety and assurance methodologies or studies, without disclosing information pertaining to articles controlled by the ITAR or EAR, the information is exempt. If the information falls into this category, you may attest that you are using this exemption by signing below.

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Date

REQUEST FOR ITAR 125.4(b)(13) EXEMPTION – Technical data

If your information is not satisfied by the exemptions stated above, the information might be releasable using exemption 125.4(b)(13) of the ITAR. This exemption allows the release of ITAR controlled information into the public domain and does not require that the information be published in order to qualify. Use of this exemption is afforded only to agencies of the Federal Government. The GSFC Export Control Office will approve this exemption only after receiving assurance that such a release is a responsible action. The following guideline has been established regarding the use of this authority: The information may not offer specific insight into the design, development, production, or manufacture of an identified ITAR controlled item (reference paragraph 2 above) in sufficient detail (by itself or in conjunction with other information in the public domain) to allow potential adversaries to replicate the item, or exploit or defeat controlled U.S. technologies. All signatures of approval on NASA Form 1676 (and in the signature blocks below) expressly indicate concurrence with the responsible use of this exemption when it is requested. If you determine that you have met these criteria, you may attest your determination by signing below, and the GSFC Export Control Office will offer favorable consideration toward approving your request under this special exemption.

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Date

If a NASA Form 1676 does not accompany this request, use of this exemption requires approval from a Branch-level or higher management official.

Print Name and Code

Signature

Date

The GSFC Export Control Office approves does not approve this exemption/request.

Thomas A. Weisz, Code 232 234

Thomas A. Weisz

9/28/05

Center Export Administrator (CEA)

Signature

Date

If your STI, ITAR, or EAR disclosure does not satisfy any of the above exemptions, please contact the GSFC Export Control Office for further clarification on the releasability of your information under the ITAR or EAR.



APPLICATION			REVISIONS			
PART NO.	NEXT ASSY	USED ON	REV	DESCRIPTION	DATE	APPROVED
		IN0112A	-	INITIAL RELEASE		

DWG NO. 576699 SH 1 REV -

DRAWING TYPE
(PER MIL-T 31000)

REVISION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	CONCEPT. DES.	
SHEET																DEVELOP. DES	X
REVISION	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PRODUCT	
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	COMMERCIAL	

REVISION STATUS OF SHEETS

UNLESS OTHERWISE SPECIFIED			
BREAK SHARP EDGES		DIMENSIONS ARE IN INCHES TOLERANCES	
INTERPRET DRAWING PER MIL-STD-100 AND PRODUCT STANDARD 25030		.XX ±.03	.XXX ±.010
SURFACE TEXTURE EXCEPT AS NOTED		LAYOUT NO.	
125 √			
APPROVED	DATE	APPROVED	DATE
THERMAL N/A		PREP BY B. Smith	
STRL ANAL N/A		RESP ENGR D. Hampton	
MASS PROP N/A		I&T Mgr. L. Hunter	
MATL & PRCS N/A		SOFTWARE QA S. Nissen	
SAFETY N/A		ELECTRICAL DESIGN C. Varner	
QA J. King		FIT/FUNC ANAL N/A	
LOGISTICS N/A		SYSTEMS D. Hampton	
SOFTWARE K. Hansen		RELIABILITY N/A	



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Boulder, CO 80306

**CSTOL: Deep Impact
HRI Simultaneous VIS/IR
Imaging Sequence**

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CONTRACT NO. 1211529

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1 SCOPE

This document provides detailed procedures for imaging with the Deep Impact High Resolution Instrument (HRI) Visible (VIS) and Infrared (IR) Detectors simultaneously.

This document has been prepared in conformance with the applicable requirements as published in the Deep Impact Integration and Test Plan, Ball document 561286.

1.1 Scope

This procedure does not directly verify any instrument performance specifications, but instead allows the operator to image with the IR and VIS detectors.

Table 1: Requirement Cross Reference

Requirement Number	Procedure Paragraph Number
N/A	N/A



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2 APPLICABLE DOCUMENTS

The following documents apply to this procedure to the extent specified herein. Unless a specific issue or revision is listed, the applicable issue shall be that in effect on the date of these operations. In conflicts between the listed documents and the contents of this procedure, this procedure shall prevail.

2.1 Government Documents

MIL-STD 1686	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment
MIL-STD-1553B	Aircraft Internal Time Division Command/Response Multiplex Data Bus
FED-STD-209B	Clean Room and Work Station Requirements, Controlled Environment

2.2 Non-Government Documents

BPS 27.20	Cleaning and Handling of Aerospace Hardware
PSP 120211	Electrostatic Discharge (ESD) Control Procedure
SI0009-105	Mission Assurance Program Plan / Deep Impact Quality Work Instruction
SPS 1930	Special Handling and Packaging for IR Detectors
SPS 3096	ESP, Components and Assembly, Sensitive to 50 Volts or Less.
BPS 21.04	Contamination Control, Cleanrooms, Clean Benches, Clean Tents
SPS 2756	Cleaning and Contamination Control, Marking and Packaging, SIRTIF
Ball Doc. 561286	Deep Impact Integration and Test Plan
WI Test.4.3.005	Controlled Redline Test Procedure
QSP1.4	Program Management Plan
QSP 11.1	Selection, Maintenance, and Control of Inspection, Measuring, and Test Equipment
QSP 11.2	Development, Certification, and Control of Ground Support Equipment
QSP 4.4	Design Changes
QSP 13.1	Control of Nonconforming Product
WI PA.13.1.004	Test Anomaly Work Sheet (TAWS)
WI PA.13.1.002	Completion of Material Discrepancy Report
SI0009-105	Deep Impact Mission Assurance (MA) Plan



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3 CONDITIONS AND REQUIREMENTS

3.1 Precautions

Failure to follow the procedures contained in this document may result in damage to flight hardware.

3.1.1 ESDS Equipment

CAUTION

IR and VIS Detectors must be handled per SPS 1930. Some hardware on Deep Impact may be sensitive to less than 50 volts. Reference SPS 3096.

The test specimen contains electrostatic-discharge sensitive (ESDS) devices that may be exposed at the electrical interfaces. Therefore, it shall be handled per MIL-STD-1686 Class 1, as implemented by PSP 120211. The test specimen, the test operator (using wrist straps), and related electrical test equipment shall be connected to a common ground before any electrical connecting or disconnecting operations, and during the use of any electrical test equipment probes. The following requirements are important:

- A. All personnel within 1 meter of the Instrument or Electronics, and all related test equipment shall be connected to a common ground at all times.
- B. An ionizing blower shall be in place and operating whenever static generators such as nylon sheeting or paper are within one meter of exposed electrical interfaces.
- C. Under no circumstances shall connections be made to the unit under test while power is applied.
- D. Test cables and equipment shall have all pins shorted to equal potential (or ground) prior to being connected to ESDS hardware. This requirement shall be met by using shorting devices on applicable connectors prior to mating.

3.1.2 Proof Load Certification

All equipment to be used for flight hardware lifts shall have current proof load certification. If certification paperwork does not exist, or is out of date, proof load testing must be performed, using a technique appropriate for the device in question. Immediately prior to use, each such device shall be visually inspected for damage. Any hardware exhibiting cracks, or any cable having parted strands, or any similar defects, shall be disposed of and replaced or documented on an MDR, regardless of its state of certification.



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3.1.3 *General Precautions for Connectors*

- A. Use connector savers on all flight hardware electrical connectors required per the Mission Assurance Program Plan.
- B. Flight hardware electrical connectors shall be capped with ESD approved covers when they are not in use, to minimize contamination, and to prevent damage from electrostatic discharge.
- C. Before mating any connector, examine the connector to assure that there is no interference or visible contaminants at the pin or socket interface. Notify QA if connectors exhibit any problems.
- D. Extreme care shall be exercised should connectors need to be probed at any time, and the following precautions taken:
 The probing pin shall be a mating pin or socket that is insulated to prevent shorting.
 The probing pin shall be gold plated, or of a non-marring smooth surface.

3.2 **Safety Requirements**

In accordance with the Mission Assurance Program Plan, the Program Safety Engineer or his delegate has final authority over safety provisions contained in this procedure, and in controlling any hazardous conditions which may arise during any operations performed in accordance with this procedure.

3.2.1 *Responsibility for Safety*

All personnel are responsible for maintaining a safe work environment. The Test Conductor or cognizant operator shall assure that appropriate safe practices are implemented during these operations, and that operations are performed in a proper order.

3.2.2 *Test Readiness reviews*

Prior to the commencement of any activities detailed in this document, and again at each shift change, the Test Conductor or cognizant operator shall conduct a pre-test briefing. Also, immediately prior to each hazardous sequence of operations, the Test Conductor or cognizant operator shall conduct a pre-task briefing. Both the pre-test and pre-task briefings shall include a discussion of:

- A. Test sequence, objectives, and equipment.
- B. Nature and location of the specific hazards to be encountered.
- C. Hazard controls, including protective equipment, safety boundaries, personnel access, etc.
- D. Limitations on concurrent activity.
- E. Emergency instructions and response, and, when the situation warrants, the availability of emergency shutdown procedures.



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3.2.3 NOTE, Caution, and Warning Notations

In this procedure follow these definitions:

- A. NOTE: Identifies operating procedures, conditions, practices, that are essential information. No hazard exists but the procedure user is inconvenienced if the information is missed.
- B. CAUTION: Used to prevent personnel from damaging equipment. CAUTIONS are inserted where appropriate to identify operating procedures, practices, and conditions, which if not strictly observed could result in damage to equipment.
- C. WARNING: Used to prevent personnel from endangering their safety or that of others. WARNINGS are inserted where appropriate to identify operating procedures, practices, and conditions that if not strictly observed could result in injury or death to personnel.

3.2.4 Mechanically Assisted Lift Hazard

Severe damage to personnel and flight hardware may result if lifting fixtures are excessively loaded. Lifting hardware shall never be used in a configuration that may apply loads greater than the working load that is clearly marked on each piece of lifting hardware. Never use lifting hardware that is not marked with a working load and proof test date. A properly certified crane operator shall control the lift.

3.3 CLEANLINESS AND ENVIRONMENT

Except as provided herein, these operations shall be conducted in a Class 100,000 or better clean area as defined in FED-STD-209B and as implemented by BATC process standard BPS 21.04. Cleanliness of the test units shall be established and maintained per BATC specification SPS 2756. Standard laboratory conditions of atmospheric temperature (18 to 28°C), pressure (520 to 810 torr), and relative humidity (25 to 70 percent) are acceptable for the operations defined herein.



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3.4 CONTROLLED REDLINE PROCEDURES

BATC Deep Impact test procedure change control shall be implemented in compliance with DEEP IMPACT QWI.

- A. Testing of flight hardware shall be required to be done in accordance with a test procedure that has been formally released prior to the start of the applicable test. This means that test procedures must be released through BATC Engineering Document Control prior to use.
- B. Once the test procedure is released, it may be changed in compliance with WI Test.4.3.005, Controlled Redline Test Procedure. Such changes may also be made during the test.
- C. Such changes must be approved by applicable personnel as prescribed in program plan QSP 1.4, Program Management.
- D. The "AS-RUN COPY" of the test procedure containing such changes is controlled by the Test Engineer.
- E. Integration procedures and other procedures that are run once do not need to have redlines incorporated. Procedures that are run more than once need to have redlines incorporated. For multiple use procedures and subsequent to completion of the applicable test, but before final buyoff of that test in the applicable Certification Log, the redline changes to the "AS- RUN COPY" test procedure shall be incorporated in a formal revision of the test procedure. The Mission Assurance manager will determine if redline incorporation is required for a particular procedure.

3.5 SOFTWARE CONFIGURATION

Prior to beginning any Deep Impact Spacecraft level test, the revision of all flight software and test software shall be recorded. The listing will include the software version numbers, tables, and database version numbers. If any software is revised during the testing, record the revision information required identifying the software configuration used during each test operation.



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4 QUALITY ASSURANCE (QA) PROVISIONS

QA provisions operative during activities defined in this procedure are derived from the Deep Impact Product Assurance (PA) Plan and the Deep Impact Quality Work Instructions (QWI) document. These provisions, summarized below, identify the interfaces between QA and test personnel.

- A. The PEQA shall be notified, in advance, of performance of any activities described in this procedure. A QA Inspector shall be assigned to monitor those activities as is deemed necessary or appropriate, in accordance with the QWI. When required, QA shall notify the customer and/or government representatives, who may, at their option, monitor or witness the activity. The PEQA shall attend the "Ready-to-Test" meeting with assigned QA personnel, to assure QA support during the test and to address and resolve outstanding QA items.
- B. The PEQA shall assure that the proper "as-run copy" of this procedure document has been prepared, and that the required Cert Log is in proper order. When all pre-test conditions have been met, the PEQA shall complete the "Ready-to-Test" entry in the applicable Cert Log.
- C. During testing, the PEQA shall approve, **prior to its implementation**, any major changes to the test procedure involving actual testing deviation, test set-up, measurement methodology, or tolerance changes, along with the cognizant design engineer and the Test Conductor.
- D. Test Support provided by the QA Inspector shall be as follows:
 - Verify that calibration is current for test and measuring equipment in accordance with QSP 11.1, Selection, Maintenance, and Control of Inspection, Measuring, and Test Equipment.
 - Verify that applicable project-specific electrical ground support equipment (GSE) has been properly certified and tagged in accordance with QSP 11.2, Development, Certification, and Control of Ground Support Equipment.
 - Verify that applicable lifting and handling GSE has been properly proof tested and tagged.
 - Assure that the proper change control practices are applied as described in section 3.4, which implements the applicable provisions of QSP 4.4, Design Changes.
 - Assist in assuring that the precautionary and safety requirements stated in sections 3.1 and 3.2 are met.
 - Assist in the inspection of test setups prior to application of power to a test specimen, and prior to any mechanism-assisted lifts or moves.
 - Witness all flight article movements, and stamp data as being approved where such data meets the requirements specified in the procedure.



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- Monitor all automated tests, and stamp data collected per procedure requirements.
 - Approve, along with the Test Conductor, any minor changes to the procedure document (such as misspellings, grammar, administrative-type errors, and non-functional operational changes).
 - Prepare quality assurance test documents as applicable. In the Action Item List of the Certification Log, document any discrepancies or non-conformances noted during or after testing, and immediately notify the PEQA.
- E. At completion of the test, the PEQA/Inspector shall perform the following:
Review all test data for completeness, and to verify that all measurements are within tolerances.
- Assure that the resulting test data fulfills the test requirements of the end item.
 - Verify completion of any related action items and disposition of any related MDR's in the test Cert Log.
- F. Upon the occurrence of a test anomaly (any event that deviates from the planned procedures, exceeds normal variations, or generates unexpected data), operation of the test article shall be stopped immediately. All other test conditions and parameters shall be maintained (except as those conditions that may pose an immediate hazard). The Inspector and the Test Conductor shall review the anomaly. Minor, non-destructive, investigative troubleshooting that will not change the failure mode of the article under test, may be conducted by the Test Conductor, with PEQA concurrence. All troubleshooting shall be performed in accordance with QSP 13.1, Control of Nonconforming Product, and WI PA.13.1.004, Test Anomaly Work Sheet (TAWS). At no time will anything other than minor troubleshooting be allowed without Material Review Board (MRB) approval. If the anomaly is found to result from human error or test equipment problems that have not affected the test article, corrective action shall be taken and testing may continue. The PEQA check the "continue test" box, the "approval" box, and signs the TAWS along with the Responsible Engineer.
- G. If a test anomaly cannot be resolved as described above, the PEQA shall be notified, and an appropriate entry shall be made in the Action Item List (AIL) portion of the Certification Log. The PEQA shall prepare a Material Discrepancy Report (MDR) and convene the Material Review Board (MRB) for action as specified in WI PA.13.1.002, Completion of Material Discrepancy Report. The MRB convened to resolve an anomaly that occurred during testing shall include a representative of the project test group. Testing of the failed item shall then not continue without prior authorization from the MRB.



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5 PROCEDURE DESCRIPTION

This procedure is used to image with the Deep Impact High Resolution Instrument (HRI) Infrared (IR) and Visible (VIS) Detectors.

Since the necessary and available selection of boards and other hardware will vary at runtime, it is the responsibility of the controlling procedure test conductor to verify (by initialing below) that the use of the CSTOL procedure for a given hardware configuration does not pose a hazard to the hardware.



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6 EQUIPMENT AND MATERIALS

The controlling procedure determines the equipment and materials list. The controlling procedure must list version numbers of all software and hardware items along with any applicable serial numbers.



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7 PRE-TEST OPERATIONS

This section provides a checklist of steps that must be completed before the initial power and command integration activities can begin.

1. Verify instrument / GSE is configured per the controlling procedure.
2. Verify that all GSE and the instrument are properly grounded.
3. Notify the QA inspector that testing is about to begin and have him or her approve the "OK to Test" entry in the appropriate Cert Log.

OK to Test QA _____



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NONE

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1 PROC TP576699 ;OASIS Definition for procedure
 2 ;hri_it_simul.prc
 3 ;

4 ;SECTION 8 DEEP IMPACT HRI SIMULTANEOUS IMAGING SEQUENCE

5 ;
 6 *****
 7 ;
 8 ; Procedure: HRI Simultaneous Imaging Sequence

9 ;
 10 ; Project: Deep Impact

11 ;
 12 ; Purpose: Takes IR and VIS images simultaneously for EMI test

13 ;
 14 ; Inputs: Frequency Sweep Range (text string)

15 ;
 16 ; Process: Ask for the RF system frequency range for that particular run
 17 ;
 18 ; Enter the image sequence, take both VIS and IR images simul.
 19 ;
 20 ; Ask whether or not to re-enter the image sequence

21 ;
 22 ; Invokes: None.

23 ;
 24 ; Notes: None.

25 ;
 26 ; History: 22.11.02 - Checked into CVS: Rev. 1.1
 27 ;
 28 *****
 29 ;

30 ;8.0.1 VARIABLE DEFINITIONS

31 ;
 32 ; Declare Variables Here

33 ;
 34 DECLARE VARIABLE \$FREQ_RNG = ""
 35 DECLARE VARIABLE \$EXP_ID = 0
 36 DECLARE VARIABLE \$REPEAT = Y Y,N
 37 ;
 38 ;

39 ;8.0.2 PROCEDURE REVISION DATE VERIFICATION

40 ;
 41 BEGIN

42 ;
 43 WRITE "<C> DWG. NO. 576699 REV- CSTOL: HRI Simul Imaging Sequence 22 Nov 2002"
 44 ;

45 WAIT ;Enter GO when procedure revision and release date are verified
 46 ;
 47 ;



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48 ;8.1 SOFTWARE VERSION VERIFICATION

49 ;
 50 WRITE "<G> Current version numbers/dates for databases are:"
 51 WRITE "<G> OASIS-CC Software: v02.05.14(6.1)(Ball)"
 52 WRITE ""
 53 WRITE "<G> GSE Command Database created on: ", DBS GSECMD
 54 WRITE "<G> GSE Telemetry Database created on: ", DBS GSETLM
 55 WRITE ""
 56 ;WRITE "<G> DI Dbs Version:", DBS DITLMVER," created on", DBS DITLMDATE
 57 WRITE "<G> Instrument Flight Software version: ", IHF STIMGVS
 58 WRITE "<G> ITOC Software version: ", GSE SWVERSION
 59 WRITE "<G> Image Bank Select: ", IHF STBANKSEL

62 ;8.2 INITIALIZE AND CLOSE SHUTTER

63 ;
 64 ;___1) Initialize shutter
 65 ;
 66 CMD IHF VIS_SH_INIT
 67 ;
 68 ;___2) Verify Shutter is Closed
 69 ;
 70 WAIT RAW IHF MCSHSENS2 = 0 DN
 71 WAIT RAW IHF MCSHSENS1 = 1 DN
 72 CHECK RAW IHF MCSHSENS2 vs 0 DN
 73 CHECK RAW IHF MCSHSENS1 vs 1 DN
 74 ;
 75 ;___3) Shutter Override / Disable the TPG
 76 ;
 77 CMD IHF VIS_SH_TPG with STATE 1
 78 WAIT RAW IHF MCTPGOVRD = 1 DN
 79 CHECK RAW IHF MCTPGOVRD VS 1 DN
 80 ;
 81 WAIT 00:00:05
 82 ;
 83 ;

84 ;8.3 SIMULTANEOUS IMAGING

85 ;
 86 ; This section generates exposures on the infrared and visible
 87 ; detectors simultaneously. The duration of testing is
 88 ; approximately 4 minutes long. For each cycle,
 89 ; ~~144~~ ¹⁰⁸ VIS exposures and ~~88~~ ⁶⁰ IR exposures are generated.
 90 ;
 91 ;___1) Define which SCU will be processing the data (SCUA)
 92 ;
 93 SET GSE SCUSTATE WITH SCUA ON, SCUB OFF
 94 ;
 95 WAIT 00:00:10

Handwritten: 10/12/00



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96  ;
97  ;___2) Initialize Exposure ID
98  ;
99  LET $EXP_ID = 1
100 ;
101 ;___3) Image Sequence
102 ;
103 IMAGE_SEQUENCE:
104 ;
105 ASK $FREQ_RNG "Enter the RF frequency range, in quotation marks."
106 ;
107 WAIT ;Enter GO to execute imaging commands
108 ;
109 CMD IHF VIS_EXP with IMAGE_MODE 1, EXP_ID $EXP_ID, PRIORITY 45, &
110 DELAY_TIME 0, DATAPATH_HW 3, DATAPATH_COMP 2, DATAPATH_UNCOMP 1, &
111 ROUTE_TO_NAV 1, ANAVRTESNIPPET 2, ANAV_BCKGND 3, ANAV_SPARE 4, &
112 ANAV_TARGETID 5, ANAV_SNIP_BOX 9, LUT_SELECT 2, IMAGE_COUNT 144, &
113 INTEG_TIME 0
114 ;
115 CMD IHF IR_EXP with IMAGE_MODE 1, EXP_ID $EXP_ID, DATAPATH_HW 2, &
116 DATAPATH_COMP 1, DATAPATH_UNCOMP 1, PRIORITY 10, LUT_SELECT 2, &
117 IMAGE_COUNT 88, INTEG_DELAY 4, RT_WINDOW_SELCT 0
118 ;
119 ; Wait for sets to complete
120 ;
121 WAIT 00:00:04
122 WAIT RAW IHF STVISPROG = 0 DN OR FOR 00:05:00
123 CHECK RAW IHF STVISPROG VS 0 DN
124 WAIT RAW IHF STIRPROG = 0 DN OR FOR 00:05:00
125 CHECK RAW IHF STIRPROG VS 0 DN
126 ;
127 LET $EXP_ID = $EXP_ID + 1
128 ;
129 ASK $REPEAT "Do you want to repeat the imaging sequence?...(Y, N)"
130 IF $REPEAT = Y
131 GOTO IMAGE_SEQUENCE
132 END IF
133 ;
134 END PROC ;Last line of executable procedure
    
```

~~108~~
 30
 KH
 12/5/02
 12/2/02



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9 RELATED FILES

There are no files associated with this procedure



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10 NOTES

10.1 Abbreviations

BASG	Ball Aerospace Systems Group
BMS	Ball Material Standard
BPS	Ball Production Standard
BASD	Ball Aerospace Systems Division
BATC	Ball Aerospace & Technologies Corp.
CAB	Corrective Action Board
CCD	Charge Coupled Device
Cert.	Certification
DAT	Digital Audio Tape
DI	Deep Impact
EM	Engineering Model
FM	Frequency Modulation
FRF	Frequency Response Function
GN ₂	Gaseous Nitrogen
GSE	Ground Support Equipment
HRI	High Resolution Imager
IE	Instrument Electronics
IR	Infrared
Lab.	Laboratory
LVPS	Low Voltage Power Supply
MDR	Material Discrepancy Report (BSSD Form BR-067)
MIL-STD	Military Standard
MRB	Material Review Board
N/A	Not Applicable
PEQA	Project Engineer for Quality Assurance
QA	Quality Assurance
SIM	Spectral Imaging Module
TAWS	Test Anomaly Worksheet (BSSD Form BR-627)
TBD	To Be Determined
VIS	Visible



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11 SIGN OFF SHEET

This sheet, by virtue of the signatures below, verifies that testing was completed in accordance with the procedures in BATC Document 576699. The responsible engineer must examine all data files and/or image files to ensure the procedure has run correctly before signing below and affirming the completion of the procedure.

Test Conductor _____ Date _____

Resp. Engineer _____ Date _____

Q.A. Inspector _____ Date _____

COMMENTS:



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