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EOSDIS Core System Project

ECS COTS Deployment Plan Volume 2

January 2000

Raytheon Systems Company
Upper Marlboro, Maryland

ECS COTS Deployment Plan Volume 2

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Preface

This document is a contract deliverable with an approval code 2. As such, it does not require formal Government approval, however, the Government reserves the right to request changes within 45 days of the initial submittal. Once approved, contractor changes to this document are handled in accordance with Class I and Class II change control requirements described in the EOS Configuration Management Plan, and changes to this document shall be made by document change notice (DCN) or by complete revision.

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Abstract

This is the second Volume of a document that will provide information and details associated with the upgrading of COTS products within the Earth Observing System Data and Information System (EOSDIS) Core System (ECS). The information included in this document provides the products being upgraded, reporting format for weekly status, and program plan and schedule information, rationale/requirements for the upgrades as well as reviews and risk mitigation activities used throughout the upgrade process.

Keywords: product, schedule, status, test, COTS

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1. Introduction

1.1 Identification

This document is the ECS COTS Deployment Plan for COTS products being upgraded for the period defined for Volume 2 of this document (November 1999 – July 2000), for the ECS project which is defined by Data Item Descriptions (DIDs) 335/DV1.

1.2 Scope

The “ECS COTS Deployment Plan, Volume 2” documents the ECS approach upgrading the various COTS packages described in Section 3.2. This includes upgrades that occur during the period December 1, 1999, through July 31, 2000. This is Volume 2 of this document. This document will be updated with subsequent volumes that will provide coverage on COTS upgrades in incremental volumes specifying upgrades over a six to nine month period of time. Volume 1 covered the period from April to October 1999. The next volume will be Volume 3 and its coverage will begin in August 2000.

1.3 Purpose

The purpose of this plan is to provide the approach for the upgrading of the COTS products identified for Volume 2. This plan describes the process for developing, integrating, testing, and shipping all Volume 2 products including reviewing, monitoring, and providing status.

1.4 Status and Schedule

The DID 335 is a new deliverable under ECS’s Contract Restructure. Volume 2 of this document will be formally delivered in December, 1999. The products identified in this document were selected for delivery during the period from December 1999 through July 2000 time frame. Status on all the products will be reported on a weekly basis.

It is essential to understand that as the development progresses, some elements of this document may change, e.g. additional products may be identified for upgrade during the period specified herein for Volume 2.

1.5 Organization

Section 1 provides information regarding the identification, scope, purpose, and objectives, and organization of this document.

Section 2 provides a listing of the related documents, which were used as a source of information for this document.

Section 3 provides the details concerning the requirements driving the COTS upgrades, the software and hardware products involved with Volume 2, as well as, the process followed to upgrade the products. The risk mitigation procedures employed by ECS are described.

The appendices provide supplemental information for the COTS upgrade process. Appendices A, B, and C describe the test and validation process and philosophy through system test. Appendix D adds a description of the Performance Verification Center (PVC), and how it fits into the COTS upgrade process. Appendix E provides a snapshot of the Primavera schedule used to manage and oversee progress. Appendix F describes the hardware procurements and upgrade rationale. Appendix G provides a table that identifies the status of the COTS products undergoing upgrade. The last appendix, Appendix H, provides a scaled down version of the COTS Compatibility Matrix that has been developed by ECS to monitor all the COTS products for vendor support issues, version compatibility, product to product compatibility, and Platform compatibility.

2. Documentation

2.1 Parent Documents

Parent documents are documents from which the ECS COTS Deployment Plan scope and content are derived.

334-CD-510	5B Science System Release Plan for ECS
335-CD-001-001	ECS COTS Deployment Plan, Volume 1
423-41-01	ECS Statement of Work
423-41-02	Functional and Performance Requirement Specification for the Earth Observing System Data and Information System (EOSDIS) Core System, Revision

2.2 Applicable Documents

The following documents are referenced within this COTS Deployment Plan for Volume 2 Upgrades or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

CM-1-005	ECS Project Instruction for Turnover and Installation of COTS, OT, Library Software and Configuration Files
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2.3 Information Documents

2.3.1 Information Documents Referenced

The following documents are referenced herein and, amplify or clarify the information presented in this document. These documents are not binding on the content of this volume.

2.3.2 Information Documents Not Referenced

The following documents, although not referenced herein and/or not directly applicable, do amplify or clarify the information presented in this document. These documents are not binding on the content of this volume.

101-CD-001	Project Management Plan for the ECS Project
409-CD-510	ECS Overall Acceptance Test Plan for Drop 5B
162-TP-001	Y2K SDPS Test Plan for ECS
212-TP-002	Y2K Plan for ECS

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3. Details

3.1 Overview

This section first summarizes the primary upgrades to the ECS COTS products that will be implemented during the period covered for this second volume of the DID 335. The principal driver during this period is the upgrade to IRIX 6.5. The impact of this operating system upgrade affects many of the products currently on the system. The products affected are grouped into 3 categories for tracking and reporting. The three categories are: 1) Products that are 'Tied to the Operating System', These products must be installed at the same time that the new OS is installed; 2) Products that 'Require Custom Code to be Rebuilt', COTS libraries that are linked into the custom code, or used to generate the custom code, or are dependent on such products ; and 3) Products that can 'Stand Alone', These products can be installed at anytime prior to the OS upgrade.

3.2 Requirement

The COTS product identified in conjunction with this COTS Deployment Plan, Volume 2, are being upgraded for several reasons. The reasons/requirements for this group of upgrades include:

- IRIX 6.5 upgrade
- Termination of vendor maintenance support for the current version in use.
- Code/product improvement upgrades to correct error conditions and unsatisfactory performance.
- Late notifications of Y2K problems from Vendors.

The technical information regarding each product, vendor, current versions, inter-actions with other products, platform dependencies is maintained in the ECS COTS Compatibility Matrix. This table is maintained by ECS for the purpose of cross checking dependencies, capabilities, and determining vendor support dates, etc. This table is critical to the COTS Upgrade process. The COTS Compatibility Matrix is described in Appendix H.

3.3 COTS Products Upgrades

3.3.1 The Software COTS products allocated to Volume 2

The SW COTS products included in Volume 2 are listed in the COTS Status Table. This table is included in Appendix F, COTS Upgrades - Volume 2.

3.3.2 The Hardware COTS Products Allocated to Volume 2

For the period covering the Volume 2 timeframe, there are several main hardware purchases planned, based on the F&PRS requirements, and PM-1 support, for any particular DAAC. Generally speaking, the upgrades fall into the following areas:

- FTP User Pull RAID disk capacity upgrades for electronic distribution.
- Science Data Server processor upgrades to SGI Origin class machines and associated RAID.
- Science Processor additions of SGI Origin class machines and/or RAID additions.
- Archive processor upgrades to SGI Origin class machines and associated RAID; and some SUN server/workstation additions.
- Distribution additions of DLT drives/Libraries; and 8-mm,CD-ROM, and DLT media as necessary.
- ASF DAAC equipment purchases.

See Appendix E for full details.

3.4 Process

This section provides the details of the activities necessary to perform all the upgrades, and verify and revalidate the system operations and performance. This section provides a detailed description of the COTS Upgrade PI (ref: ECS PI SE-1-025).

The procedures covering the life cycle of upgrading a COTS product are depicted in the ECS COTS Upgrade Process figure, Figure 3.2-1. The process includes the requirements process that will initiate an upgrade activity, the reviews and sign off review boards utilized along the way as checkpoints/milestones to insure accuracy, adequate verification, and coordination with all ECS segments, customer activities, and DAACs that will be the recipient of the upgrades.

The CCR process is the key activity providing the reviews/system checks to insure performance and system validation standards are met. These begin with the procurement of the upgrade, the introduction of the upgrade into Developments domain for installation, analysis, and test within the IDG Cell and the Functionality Lab. Upon satisfaction through Development, the product is ready for transition to System Test within the VATC. System Test selects the appropriate tests from the System VDB, and RTSC is responsible to perform the installation. Satisfactory completion of the VATC activities results in the product being prepared for a Pre-Ship Review (PSR). The PSR verifies all testing and performance milestones have been met, installation instructions prepared and checked out before the product is released for delivery to the customer. A release CCR is generated to accomplish this release. ECS PI CM-1-005 describes the turnover and installation of COTS procedures.

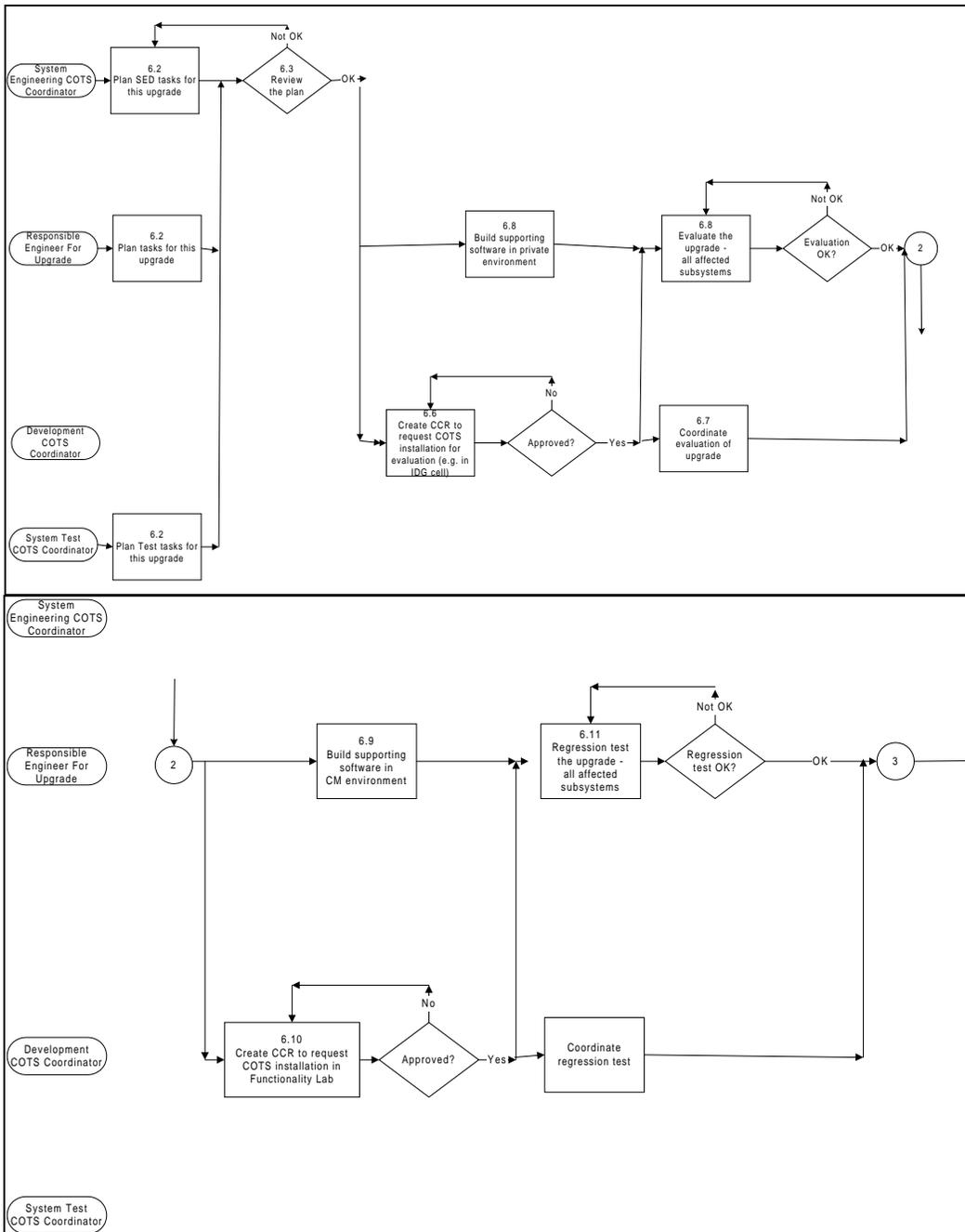


Figure 3.3-1. COTS Life Cycle Process

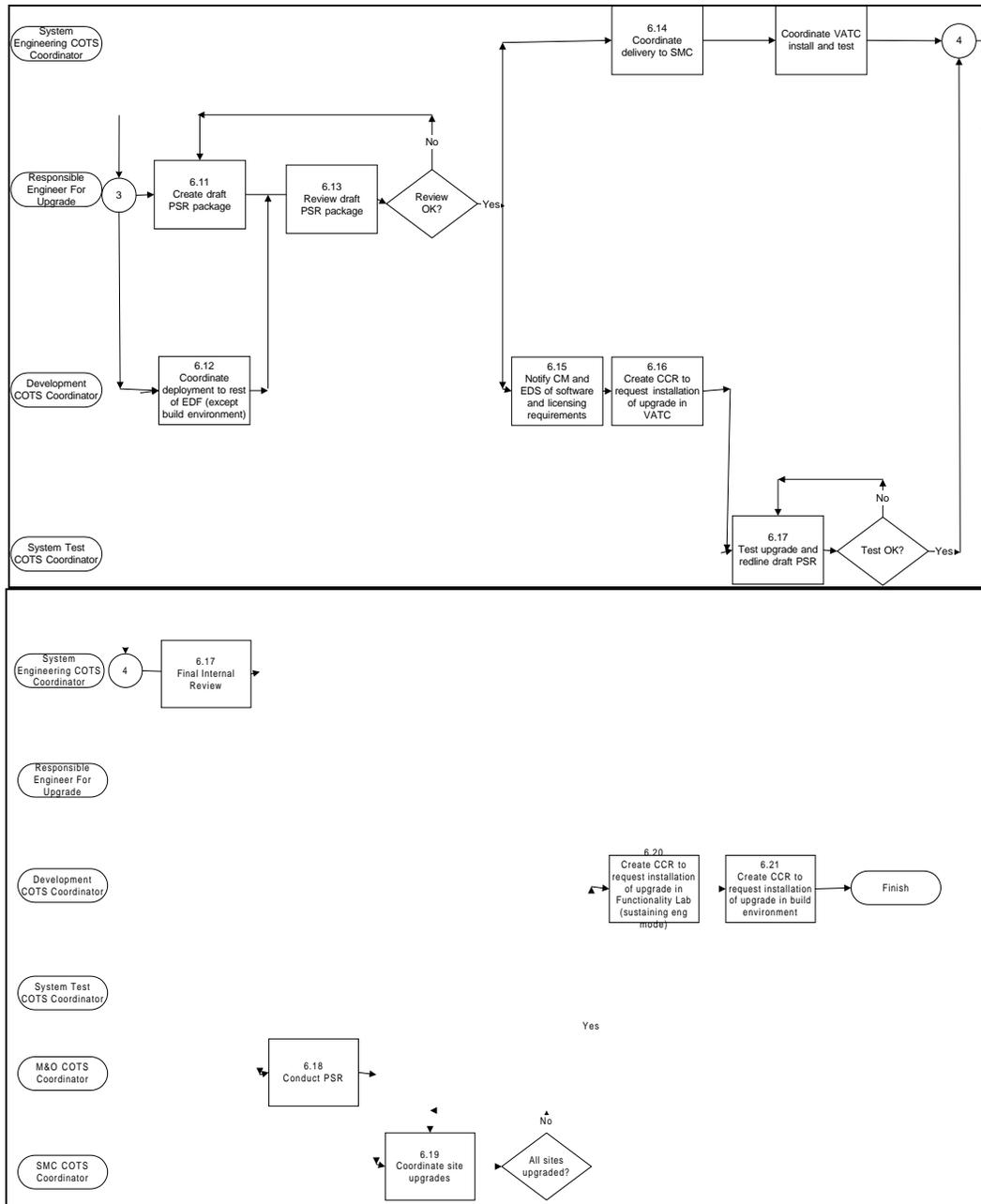


Figure 3.3-1. COTS Life Cycle Process (Continued)

3.5 Deployments and Upgrades Required:

Upgrades are listed in the COTS Upgrade Status Sheet that is updated weekly and briefed to management and the customer and is part of System Engineering’s weekly status report. This chart details progress of each product towards turnover and installation at the SMC. Deployment

to the DAACS is performed from the SMC electronically. The chart is contained in Appendix G, COTS Status Table.

3.6 Test Approach

The Test Engineering organization and/or the Development organization develop or have an existing set of test cases that exercise the COTS software. COTS packages are delivered in various ways – some COTS software packages are delivered with the ECS custom software and have an associated Ticket (including acceptance criteria), and some are delivered as autonomous upgrades to existing COTS software packages that are not part of the custom software.

For each COTS package having an associated Ticket and delivered along with the ECS custom software, Test Engineering, via established process, develops new test cases. For each COTS software upgrade having no associated Ticket, regression testing is performed using existing test cases. If a regression test case does not yet exist, Development organization or Raytheon Technical Services Company (RTSC) engineers develop a test case and provide it to Test Engineering after upgrade installation and checkout in the test facility.

3.6.1 System Verification Process

For a new COTS software package having an associated Ticket, the acceptance criteria (acceptance criteria are specified in Tickets, which are requirements and acceptance criteria specifications) are allocated to an acceptance test. This test case is written to exercise the COTS software in such a way as to demonstrate satisfaction of all allocated acceptance criteria. The mapping between Tickets and test cases is captured in the Verification Database (VDB), along with the associated requirements and acceptance criteria. Test Engineering documents a summary of each test case in the Science System Release Acceptance Test Plan (DID-409), which is reviewed and approved by ESDIS.

The initial development of a test case starts when a draft Ticket is released. Test Engineering develops the each test case in accordance with established practices, processes, and procedures and formats. The test cases are refined as the Tickets are finalized and approved by the ESDIS. ESDIS also reviews and approves each test case that has associated acceptance criteria. Each test case identifies the steps for verifying the acceptance criteria. Upon approval of one or more test cases, Test Engineering generates a CCR to baseline the mapping of test procedures to acceptance criteria until all mappings are baselined. Any changes to the mappings are under CCB control. ESDIS-approved test cases form the Science System Release Acceptance Test Procedures (DID-411)

At the completion of Custom Software Release Integration and release to Test Engineering, and prior to start of formal verification, an internal Test Readiness Review (TRR) is held. An assessment of readiness is made with regard to software and integration status, test facility and configuration status, and test status (including approved test cases, supporting data and tools, and available resources). After a successful TRR, Test Engineering dry runs and conducts formal tests to verify satisfaction of the COTS software acceptance criteria.

As-executed test cases and problem workarounds are documented as a result of test case dry run and formal conduct, recorded on the test execution forms. Test Development Folders (TDFs) are created for each test case and maintained throughout the test program. Each test activity is recorded on Test Execution Forms and filed in their individual test folders. During the verification process, discrepancies are noted on the Test Execution Form. Workarounds to circumvent system deficiencies found during testing are also recorded on the test execution forms for the TDF of the test case that uncovered the deficiency. Discrepancies (and workarounds, if available) are then recorded on NCRs, rated by the test engineer according to severity, and filed in DDTS. TDFs are returned to a secure location, under configuration control, after completion of each test session. Each TDF may be subjected to an audit to ensure completeness and accuracy. TDF audits are conducted routinely by the ECS Quality Office in accordance with ECS Project Instruction TT-1-001. After the audit results are discussed with Test Engineering personnel, they are posted on the Test Engineering web page. If necessary, a corrective action may be assigned, and the TDF is re-audited after the corrective action is addressed. The audits are designed to ensure compliance with test folder requirements, as specified in TT-1-001, and to assist in the successful completion of the Functional Configuration Audit (FCA).

The preparation of test results begins with the routine recording of test case execution results on the Test Execution Form maintained in the TDFs, and continues with their incorporation into the TDFs, DDTS and the VDB. This information forms the basis for the preparation of acceptance test results into a Science System Release Test Report (DID-412).

3.6.2 Regression Testing

For each COTS software *upgrade* (which do not have associated Tickets and acceptance criteria), the Test Engineering organization executes one or more regression tests to exercise system functionality and the COTS software upgrade package. Additionally, other major ECS functions may be exercised during this regression testing. This provides confidence that the COTS package upgrade has not adversely affected the behavior of unmodified software and the COTS supports system needs.

If a regression test case does not yet exist, Development organization or Raytheon Technical Services Company (RTSC) engineers develop a test case and provide it to Test Engineering after upgrade installation and checkout in the test facility. Regression Testing is performed on all COTS upgrades delivered to the VATC.

RTSC engineers install in the VATC, configure and checkout all COTS package upgrades. Thereafter, the ECS Test Engineering organization executes one or more regression tests to exercise system functionality that interfaces with, depends upon, or otherwise utilizes the COTS package.

Satisfactory completion of the VATC testing activities results in the product being prepared for a Pre-Ship Review (PSR). The PSR verifies all testing and performance milestones have been met, installation instructions prepared, and checked out before the product is released for delivery to the customer. A CCR is generated to accomplish this release. ECS PI CM-1-005 describes the turnover and installation of COTS procedures.

3.7 Risk Mitigation Plans and Activities

Achieving balanced technical/cost/schedule performance, the ECS project pivots on three critical processes: risk management, cost/schedule management, and metrics driven management. This section describes the project's approaches to these critical management processes.

3.7.1 ECS Risk Management

Risk Management for the COTS upgrades is controlled, monitored, and resolved by thoroughly tracking progress for the entire upgrade cycle and exhaustive testing and analysis at the unit level, the subsystem level, and the system level. The System Engineering COTS Coordinator (SECC) also monitors and tracks risks associated with the COTS upgrade process. In addition to the above, the SECC is developing additional monitoring and analysis support because of the IRIX 6.5 upgrade. The SECC conducts on a weekly basis, a review and status session for all IRIX related product upgrades. Any product that is identified as having a risk associated with it is recorded in a tracking file. The SECC assigns an individual as being responsible for this product's risk mitigation, and weekly reporting the status and progress in resolving the risk associated with the product upgrade. The risks that have been identified and recorded are included in Appendix I.

3.7.2 Cost/Schedule Management

Tracking and monitoring is accomplished with each COTS products plan in the Primavera Scheduling plan, and weekly COTS meetings with EDS, Deployment, System Engineering, Configuration Management, Systems Tests, O&M, and the DAACs. This status is documented on the COTS status report (Appendix G) and reported to management and the customer (ESDIS) on a weekly basis.

3.7.3 Metrics Driven Management Approach

Metrics are used as a management tool to assess progress, adjust resources, and aid in the delivery of ECS/SDPS. Planned versus actual metrics aid in determining progress towards the planned goals. This type of metric is used by all subsystems and disciplines. Other types of metrics include: the rate of discovery of problems or issues, the rate of changes in code, and the rate of new code being developed. These rate metrics provide trends that predict system stability and help identify additional potential resource needs. The Program Manager will maintain a sustained emphasis to continually improve the data collection, analysis and presentation of the relevant metrics of the project.

Selected metrics presentation charts and their updates will be presented at the Daily Status Reviews, and posted for use and reference by interested individuals, and formally provided in the weekly update to the monthly program report.

Metrics delivered each week include:

- A) COTS Integration Plan vs. Actual
- B) COTS weekly status report (Appendix F)
- C) COTS Primavera schedule

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Appendix A. Tests/Validation Philosophy for the IDG Cell

The IDG Cell is controlled and operated by the Infrastructure group of the Development Department. The products listed in Appendix G of this document form the basis of all COTS products being updated during the time frame specified in this document. The purpose and the objectives of testing the COTS product in the IDG cell are to perform the first level of validation for the upgrade. To do this, the IDG Cell will perform unit level type testing on each of these products. These tests will utilize test drivers, and test data as appropriate. The testing may test to a single subsystem level. The objectives of IDG Cell level testing is to demonstrate the products specific interfaces. This testing is characterized as 'Pre-Integration Testing'.

Detailed test plans and procedures will be developed by the assigned Responsible Engineer (RE) subsequent to the COTS Product Upgrade kickoff meeting. These test plans and procedures will be validated and approved and form the basis for approval to move to the next level of testing and validation. Eventually, the test plans and procedures are enhanced by the RE to become the testing criteria for the verification/validation during installation at the appropriate customer facilities.

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Appendix B. Tests/Validation Philosophy for the Functionality Lab

The Functionality Lab is controlled and operated by the Construction group of the System Development Department.

The Functionality Lab will perform Regression Tests on each of the products listed above. These tests will be configuration specific, interact with executables, and have specific scenarios or test cases run against them. This level of testing will verify the performance of the product at the subsystem level. The test plans are updated and validated by the RE. Upon completion, a CCR is prepared to hand the product off for system testing.

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Appendix C. VATC Testing/Validation Philosophy

VATC Mission:

System Engineering has implemented a Verification and Test Center (VATC) at the Landover, MD, facility. The VATC provides a DAAC-realistic test platform and environment for hosting ECS software releases, where ECS software can be installed, checked out, regression tested, or otherwise exercised and/or formally acceptance-tested in isolation prior to deployment in accordance with ECS Acceptance Test Plans and Science System Release Plans. VATC testing also includes verification and regression testing of patches to deployed software prior to release to the DAACs.

COTS in the VATC:

The VATC configuration is a controlled environment, which is maintained by Test Engineering and audited by CM. Formal testing performed in the VATC relies on tight control of versions of software to achieve repeatability. This control is achieved through processes defined by the ECS Configuration Control Board (CCB). COTS software packages are a major component of the configuration, included with ECS custom software or as upgrades to existing COTS software.

Test Engineering:

- Develops testing schedules and plans for the overarching test program
- Verifies new or upgraded COTS products installed in the VATC
- Reviews new/upgrade product lists
- Develops/updates detailed test procedures as required for COTS products not covered by existing test procedures
- Executes specific acceptance tests with ECS test data to verify product function and satisfaction of acceptance criteria associated with new COTS software
- Regression tests COTS software upgrades to verify product function and build confidence that unmodified software has not been adversely affected
- Documents test results with test execution forms and Non-Conformance Reports (NCRs)
- Support Pre-Shipment Review (PSR) and Consent-To-Ship Review (CSR).

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Appendix D. Performance Verification Center Philosophy

Performance Verification Center (PVC): System Engineering and ECS have implemented a PVC at the Landover facility, that provides a DAAC-like realistic environment for hosting ECS releases, with a comprehensive suite of hardware and ability for input, output and storage load simulation. End to end scenarios are performed in the PVC facility to demonstrate functional integrity for internal interfaces and to validate performance per the SSRP Workload Specification. External interface testing is conducted to the extent possible in each test environment under conditions that simulate operational activities.

COTS in the PVC: The PVC configuration is a baseline controlled environment which is maintained and audited by CM. The analysis performed in the PVC relies on tight control of versions of software to achieve repeatability. This control is achieved through processes defined by the ECS CCB. COTS packages are a major component of the configuration. The general desire is to run performance tests on a configuration equivalent to an actual DAAC, using COTS versions which have been PSR'd and released to the field. As such, the PVC may be in a configuration ahead of the operational baseline at the DAACS. However, there are some occasions where Systems Engineering or Development Engineering determines that a COTS package may present a performance impact, or where a version change is required to support performance testing of a new release or patch. In this case, the COTS package may be CCR'd for installation into the PVC in advance of the PSR.

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Appendix E. Schedule for Volume 2 COTS Upgrades

Primavera Schedule with all the activities and milestones for the COTS products assigned to this volume. Below is a snap shot of the Primavera P3 schedule for the COTS products that are currently in the upgrade process. Note that one item utilizes the full template of all activities that are being monitored as part of the COTS Upgrade process. The remaining products have been modified to show only the final activities rolling up to the PSR. This was done to conserve space in this document.

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMN	2000												2001											
HP Open View																																
Drop SB																																
SECOT5B12D	HPOV 6.0: COTS turnover to M&O	22	COTSUPG	24JAN00		5B	223NH5B02	D2	◇ HPOV 6.0: COTS turnover to M&O																							
MODPT00370	HPOV 6.0: DAAC Walkthrough	22	COTS		21APR00*	5B	810N2H	L	◇ HPOV 6.0: DAAC Walkthrough																							
MODPT00380	HPOV 6.0: COTS PSR	22	COTS		21APR00	5B	810N2H	L	◇ HPOV 6.0: COTS PSR																							
Intelligent Query—IQ																																
Drop SB																																
SECOT5B150	IQ and SQL Reports: COTS turnover to M&O	13	COTSUPG	27JAN00*		5B	223NH5B02	D2	◇ IQ and SQL Reports: COTS turnover to M&O																							
MODPT00050	Intelligent Query: DAAC Walkthrough	13	COTS		03FEB00*	5B	810N2H	L	◇ Intelligent Query: DAAC Walkthrough																							
MODPT00060	Intelligent Query: COTS PSR	13	COTS		10FEB00*	5B	810N2H	L	◇ Intelligent Query: COTS PSR																							
SQR																																
Drop SB																																
SECOT5B170	SQR: COTS Turnover to M&O	14		27JAN00		5B	223NH5B02	D2	◇ SQR: COTS Turnover to M&O																							
MODPT00070	SQR: DAAC Walkthrough	14	COTS		03FEB00*	5B	810N2H	L	◇ SQR: DAAC Walkthrough																							
MODPT00080	SQR: COTS PSR	14	COTS		10FEB00*	5B	810N2H	L	◇ SQR: COTS PSR																							
Netscape Browser / Communicator																																
Drop SB																																
DVCLS5B500	Netscape Communicator 4.6 Upgrade: Kickoff	26	COTSUPG	20DEC99*	03JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: Kickoff																							
DVCLS5B505	Netscape Communicator 4.6 Upgrade: Upgrade Plan	26	COTSUPG	04JAN00	10JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: Upgrade Plan																							
DVCLS5B510	Netscape Communicator 4.6 Upgrade: Readiness Rev	26	COTSUPG	11JAN00	13JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: Readiness Rev																							
DVCLS5B515	Netscape Communicator 4.6 Upgrade: Readiness Rev	26	COTSUPG		13JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: Readiness Rev																							
DVCLS5B520	Netscape Communicator 4.6 Upgrade: Readiness Rev	26	COTSUPG	14JAN00	18JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: Readiness Rev																							
DVCLS5B525	Netscape Communicator 4.6 Upgrade: IDG Cell CCR	26	COTSUPG	19JAN00	21JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: IDG Cell CCR																							
DVCLS5B530	Netscape Communicator 4.6 Upgrade: Develop Data	26	COTSUPG	19JAN00	25JAN00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: Develop Data																							
BSMGT5B650	Netscape Communicator 4.6 IDG Cell Install	26	COTSUPG	24JAN00	26JAN00	5B	810N3T5B	D3	◇ Netscape Communicator 4.6 IDG Cell Install																							
DVCLS5B535	Netscape Communicator 4.6 Upgrade: IDG Cell Conf	26	COTSUPG	27JAN00	02FEB00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: IDG Cell Conf																							
DVCO6A260	Netscape 4.7 COTS Upgrade Integration	26	COTSUPG	02FEB00	08FEB00	5B	840N6H1	D3	◇ Netscape 4.7 COTS Upgrade Integration																							
DVCLS5B540	Netscape Communicator 4.6 Upgrade: IDG Cell Test	26	COTSUPG	03FEB00	09FEB00	5B	840N6H1	D3	◇ Netscape Communicator 4.6 Upgrade: IDG Cell Test																							
Project Start: 01SEP97		Project Finish: 10DEC00		Data Date: 17DEC99		Run Date: 21DEC99		ECSIP		Sheet 1 of 8																						
		<p align="center">ECS Science Data Processing System Pre-6A COTS By Product (Fin > 11/26) As of December 7, 1999</p>																														

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
DVCL5B545	Netscape Communicator 4.6 Upgrade: IDG Cell Test	26	COTSUPG		09FEB00	5B	840N6H1	D3	○ Netscape Communicator 4.6 Upgrade: IDG Cell																							
DVCL5B550	Netscape Communicator 4.6 Upgrade: IDG Cell Test	26	COTSUPG	10FEB00	14FEB00	5B	840N6H1	D3	△ Netscape Communicator 4.6 Upgrade: IDG Ce																							
DVCL5B555	Netscape Communicator 4.6 Upgrade: Develop Draft	26	COTSUPG	15FEB00	21FEB00	5B	840N6H1	D3	□ Netscape Communicator 4.6 Upgrade: Develop																							
DVCL5B560	Netscape Communicator 4.6 Upgrade: Draft PSR Doc	26	COTSUPG		21FEB00	5B	840N6H1	D3	○ Netscape Communicator 4.6 Upgrade: Draft P																							
DVCL5B565	Netscape Communicator 4.6 Upgrade: Func. Lab CCR	26	COTSUPG	22FEB00	24FEB00	5B	840N6H1	D3	△ Netscape Communicator 4.6 Upgrade: Func. l																							
DSMGT5B605	Netscape Communicator 4.6 Func. Lab Install	26	COTSUPG	25FEB00	29FEB00	5B	810N3T5B	D3	□ Netscape Communicator 4.6 Func. Lab Install																							
DVCL5B570	Netscape Communicator 4.6 Upgrade: Func. Lab Con	26	COTSUPG	01MAR00	07MAR00	5B	840N6H1	D3	△ Netscape Communicator 4.6 Upgrade: Func.																							
DVCO75B150	Netscape 4.6 COTS Integration	26	COTSUPG	06MAR00	14MAR00	5B	840N6H1	D3	□ Netscape 4.6 COTS Integration																							
DVCL5B575	Netscape Communicator 4.6 Upgrade: VATC OCR Gen/	26	COTSUPG	15MAR00	17MAR00	5B	840N6H1	D3	△ Netscape Communicator 4.6 Upgrade: VATC																							
DSMGT5B610	Netscape Communicator 4.6 VATC Install	26	COTSUPG	20MAR00	22MAR00	5B	810N3T5B	D3	□ Netscape Communicator 4.6 VATC Install																							
DVCL5B580	Netscape Communicator 4.6 Upgrade: Turnover to T	26	COTSUPG		22MAR00	5B	840N6H1	D3	○ Netscape Communicator 4.6 Upgrade: Turn																							
DVCL5B585	Netscape Communicator 4.6 Upgrade: PSR Doc VATC	26	COTSUPG	23MAR00	27MAR00	5B	840N6H1	D3	△ Netscape Communicator 4.6 Upgrade: PSR																							
DVCL5B590	Netscape Communicator 4.6 Upgrade: Final PSR Doc	26	COTSUPG		27MAR00	5B	840N6H1	D3	○ Netscape Communicator 4.6 Upgrade: Final																							
DVCO75B153	Netscape Communicator COTS Upgrade Test	26	COTSUPG	23MAR00	29MAR00	5B	61N1H105BL	D1	△ Netscape Communicator COTS Upgrade Te																							
DVCL5B595	Netscape Communicator 4.6 Upgrade: Final PSR Doc	26	COTSUPG	28MAR00	30MAR00	5B	840N6H1	D3	□ Netscape Communicator 4.6 Upgrade: Final																							
MODPT00270	Netscape Communicator 4.7: DAAC Walkthrough	26	COTS		30MAR00*	5B	810N2H	L	○ Netscape Communicator 4.7: DAAC Walkthro																							
MODPT00280	Netscape Communicator 4.7: COTS PSR	26	COTS		30MAR00*	5B	810N2H	L	○ Netscape Communicator 4.7: COTS PSR																							
SECOT5B925	Netscape Communicator 4.7: COTS turnover to M&O	26		31MAR00		5B	223N45B02	D2	○ Netscape Communicator 4.7: COTS turnove																							
Netscape Enterprise Server																																
Drop SA																																
SECOT5A000	Netscape Enterprise Server: COTS turnover to M&O	01	COTSUPG	11NOV99A		5A	223N	D2	△ Netscape Enterprise Server: COTS turnover to M&O																							
Sybase Adaptive Server 11.5.1																																
Drop SB																																
SECOT5B110	Sybase 11.5.1: COTS turnover to M&O	10	COTSUPG	20MAR00		5B	223N45B02	D2	○ Sybase 11.5.1: COTS turnover to M&O																							
MODPT00130	Sybase Adaptive Server: DAAC Walkthrough	10	COTS		11APR00*	5B	810N2H	L	△ Sybase Adaptive Server: DAAC Walkthro																							
MODPT00140	Sybase Adaptive Server: COTS PSR	10	COTS		21APR00*	5B	810N2H	L	○ Sybase Adaptive Server: COTS PSR																							
Sybase Open Client 11.1.1																																
Drop SB																																
SECOT5B130	Sybase OC 11.1.1: COTS turnover to M&O	09	COTSUPG	18FEB00		5B	223N45B02	D2	○ Sybase OC 11.1.1: COTS turnover to M&O																							
MODPT00150	Sybase Open Client: DAAC Walkthrough	09	COTS		05APR00*	5B	810N2H	L	○ Sybase Open Client: DAAC Walkthrough																							

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
MODPT00180	Sybase Open Client: COTS PSR	09	COTS		13APR00*	5B	810N2H	L	○ Sybase Open Client: COTS PSR																							
Tivoli																																
Drop SB																																
SECOT58070	Tivoli 3.6: COTS turnover to M&O	07	COTSUPG			5B	223N45B02	D2	○ Tivoli 3.6: COTS turnover to M&O																							
MODPT58040	Tivoli 3.6 COTS Upgrade Instruction Walkthrough	07	COTS		21DEC99*	5B	810N2H	L	○ Tivoli 3.6 COTS Upgrade Instruction Walkthrough																							
MODPT58020	Tivoli 3.6 COTS Upgrade PSR	07	COTS		05JAN00*	5B	810N2H	L	○ Tivoli 3.6 COTS Upgrade PSR																							
Sybase Replication Server																																
Drop SB																																
SECOT58090	Sybase Replication Server: COTS Turnover to M&O	29		20JAN00		5B	223N45B02	D2	○ Sybase Replication Server: COTS Turnover to M																							
MODPT00190	Sybase Rep Server: DAAC Walkthrough	29	COTS		15FEB00*	5B	810N2H	L	○ Sybase Rep Server: DAAC Walkthrough																							
MODPT00200	Sybase Rep Server: COTS PSR	29	COTS		24FEB00*	5B	810N2H	L	○ Sybase Rep Server: COTS PSR																							
Sybase Central																																
Drop SB																																
SECOT58100	Sybase Central: COTS Turnover to M&O	30		16JAN00		5B	223N45B02	D2	○ Sybase Central: COTS Turnover to M&O																							
MODPT00210	Sybase Central 11.5: DAAC Walkthrough	30	COTS		15FEB00*	5B	810N2H	L	○ Sybase Central 11.5: DAAC Walkthrough																							
MODPT00220	Sybase Central 11.5: COTS PSR	30	COTS		24FEB00*	5B	810N2H	L	○ Sybase Central 11.5: COTS PSR																							
IRIX 6.5																																
Drop SB (Inv 4.5.x)																																
SECOT58290	IRIX 6.5: COTS turnover to M&O	34		16JUN00		5B	223N45B02	D2	○ IRIX 6.5: COTS turnover to M&O																							
MODPT00350	IRIX 6.5, COTS, Custom Code: DAAC Walkthrough	34	COTS		29JUN00*	5B	810N2H	L	○ IRIX 6.5, COTS, Custom Code: DAM																							
MODPT00360	IRIX 6.5, COTS, Custom Code: COTS PSR	34	COTS		10JUL00*	5B	810N2H	L	○ IRIX 6.5, COTS, Custom Code: COT																							
IMSL 3.04.0																																
Drop SB																																
SECOT58915	IMSL: COTS turnover to M&O	35		17DEC99*		5B	223N45B02	D2	○ IMSL: COTS turnover to M&O																							
MODPT00030	IMSL: DAAC Walkthrough	35	COTS		17JAN00*	5B	810N2H	L	○ IMSL: DAAC Walkthrough																							
MODPT00040	IMSL: COTS PSR	35	COTS		28JAN00*	5B	810N2H	L	○ IMSL: COTS PSR																							
HDF 4.1r3																																
Drop SB																																
SECOT58160	HDF: COTS turnover to M&O	36		24FEB00		5B	223N45B02	D2	○ HDF: COTS turnover to M&O																							
MODPT00230	HDF 4.1r3: DAAC Walkthrough	36	COTS		29FEB00*	5B	810N2H	L	○ HDF 4.1r3: DAAC Walkthrough																							
MODPT00240	HDF 4.1r3: COTS PSR	36	COTS		03MAR00*	5B	810N2H	L	○ HDF 4.1r3: COTS PSR																							

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
IDL 5.3																																
Drop 5B																																
SECOT5B200	IDL: COTS turnover to M&O	37		30JUN00*		5B	223NH5B02	D2	◇ IDL: COTS turnover to M&O																							
Drop 55 (Irix 6.5.x)																																
MODPT00390	IDL 5.3: DAAC Walkthrough	37	COTS	24JUL00*	03AUG00	5S	810N2H	L	△ IDL 5.3: DAAC Walkthrough																							
MODPT00400	IDL 5.3: COTS PSR	37	COTS		03AUG00*	5S	810N2H	L	◇ IDL 5.3: COTS PSR																							
SGI Y2K/DCE																																
Drop 5B																																
MODPT00310	SGI Y2K/DCE: DAAC Walkthrough	49	COTS		14FEB00*	5B	810N2H	L	◇ SGI Y2K/DCE: DAAC Walkthrough																							
MODPT00320	SGI Y2K/DCE: COTS PSR	49	COTS		14FEB00*	5B	810N2H	L	◇ SGI Y2K/DCE: COTS PSR																							
SECOT5B180	SGI Y2K/DCE Rollup: COTS Turnover to M&O	49		15FEB00		5B	223NH5B02	D2	◇ SGI Y2K/DCE Rollup: COTS Turnover to M&O																							
HP Security/Y2K																																
Drop 5B																																
SECOT5B240	HP Security/Y2K: COTS Turnover to M&O	50		20JAN00		5B	223NH5B02	D2	◇ HP Security/Y2K: COTS Turnover to M&O																							
MODPT00330	HP Security/Y2K: DAAC Walkthrough	50	COTS		01FEB00*	5B	810N2H	L	◇ HP Security/Y2K: DAAC Walkthrough																							
MODPT00340	HP Security/Y2K: COTS PSR	50	COTS		04FEB00*	5B	810N2H	L	◇ HP Security/Y2K: COTS PSR																							
Purify																																
Drop 5B																																
SECOT5B945	Purify 4.5 (Sun and HP): COTS turnover to M&O	51		13MAR00		5B	223NH5B02	D2	◇ Purify 4.5 (Sun and HP): COTS turnover to M&O																							
MODPT00110	Purify: DAAC Walkthrough	51	COTS		14MAR00*	5B	810N2H	L	◇ Purify: DAAC Walkthrough																							
MODPT00120	Purify: COTS PSR	51	COTS		16MAR00*	5B	810N2H	L	◇ Purify: COTS PSR																							
Clearcase 3.2.1																																
Drop 5B																																
SECMO5B121	CMO - ClearCase Upgrade Irix 6.5	52	COTS	18FEB00*	16MAR00	5B	151NHB05	D1	△ CMO - ClearCase Upgrade Irix 6.5																							
SECOT5B955	Clearcase: COTS turnover to M&O	52		17MAR00		5B	223NH5B02	D2	◇ Clearcase: COTS turnover to M&O																							
MODPT00290	ClearCase 3.2.1: DAAC Walkthrough	52	COTS		21MAR00*	5B	810N2H	L	◇ ClearCase 3.2.1: DAAC Walkthrough																							
MODPT00300	ClearCase 3.2.1: COTS PSR	52	COTS		28MAR00*	5B	810N2H	L	◇ ClearCase 3.2.1: COTS PSR																							
Visual Workshop 3																																
Drop 5B																																
MODPT00010	Visual Workshop: DAAC Walkthrough	53	COTS		01JUN00	5B	810N2H	L	◇ Visual Workshop: DAAC Walkthrough																							
MODPT00020	Visual Workshop: COTS PSR	53	COTS		01JUN00	5B	810N2H	L	◇ Visual Workshop: COTS PSR																							
SECOT5B965	Visual Workshop: COTS turnover to M&O	53		02JUN00		5B	223NH5B02	D2	◇ Visual Workshop: COTS turnover to M&O																							

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
Perl 5.005-03																																
Drop 5B																																
MODPT00250	Perl 5.005-03: DAAC Walkthrough	57	COTS		27JAN00*	5B	810N2H	L	◇ Perl 5.005-03: DAAC Walkthrough																							
MODPT00260	Perl 5.005-03: COTS PSR	57	COTS		28JAN00*	5B	810N2H	L	◇ Perl 5.005-03: COTS PSR																							
SECOT5B975	PERL: COTS turnover to M&O	57		28JAN00		5B	223NH5B02	D2	◇ PERL: COTS turnover to M&O																							
Secure Shell																																
Drop 5B																																
SECOT5B935	Secure Shell: COTS turnover to M&O	63		10JAN00*		5B	223NH5B02	D2	◇ Secure Shell: COTS turnover to M&O																							
MODPT00090	Secure Shell: DAAC Walkthrough	63	COTS		13JAN00*	5B	810N2H	L	◇ Secure Shell: DAAC Walkthrough																							
MODPT00100	Secure Shell: COTS PSR	63	COTS		20JAN00*	5B	810N2H	L	◇ Secure Shell: COTS PSR																							
SECOT5B190	Secure Shell Comm Client: COTS turnover to M&O	63		30JUN00*		5B	223NH5B02	D2	◇ Secure Shell Comm Client: COTS turnover to M&O																							
ACG																																
Drop 5B																																
SEHWEE0320	EDC ACG Design and Requirements Determination	67	COTSUPG	21MAR00*	21APR00	5B	221NEB10	D3	△ EDC ACG Design and Requirements Determination																							
SEHWEE0360	GSFC ACG Design and Requirements Determination	67	COTSUPG	21MAR00*	21APR00	5B	221NEB09	D3	△ GSFC ACG Design and Requirements Determination																							
SEHWEE0440	EDC ACG Design and Requirements Determination	67	COTSUPG	21MAR00*	21APR00	5B	221NEB10	D3	△ EDC ACG Design and Requirements Determination																							
SEHWEE0325	EDC ACG Procurement and Tracking Process	67	COTSUPG	24APR00	25MAY00	5B	460N1EB04	D3	△ EDC ACG Procurement and Tracking Process																							
SEHWEE0365	GSFC ACG Procurement and Tracking Process	67	COTSUPG	24APR00	25MAY00	5B	460N1EB04	D3	△ GSFC ACG Procurement and Tracking Process																							
SEHWEE0445	LARC ACG Procurement and Tracking Process	67	COTSUPG	22MAY00	23JUN00	5B	460N1EB04	D3	△ LARC ACG Procurement and Tracking Process																							
SEHWEE0330	GSFC ACG Equipment Inventory and Installation	67	COTSUPG	26MAY00	03JUL00	5B	221NEB11	D3	△ GSFC ACG Equipment Inventory and Installation																							
SEHWEE0335	EDC ACG Completion of Procurement	67	COTSUPG		03JUL00	5B	460N1EB04	L	◇ EDC ACG Completion of Procurement																							
SEHWEE0370	GSFC ACG Equipment Inventory and Installation	67	COTSUPG	26MAY00	03JUL00	5B	221NEB11	D3	△ GSFC ACG Equipment Inventory and Installation																							
SEHWEE0375	GSFC ACG Completion of Procurement	67	COTSUPG		03JUL00	5B	460N1EB04	L	◇ GSFC ACG Completion of Procurement																							
SEHWEE0450	LARC ACG Equipment Inventory and Installation	67	COTSUPG	26JUN00	01AUG00	5B	221NEB13	D3	△ LARC ACG Equipment Inventory and Installation																							
SEHWEE0455	LARC ACG Completion of Procurement	67	COTSUPG		01AUG00	5B	460N1EB04	L	◇ LARC ACG Completion of Procurement																							
SEHWEE0520	NSIDC ACG Design and Requirements Determination	67	COTSUPG	15AUG00*	18SEP00	5B	221NEB12	D3	△ NSIDC ACG Design and Requirements Determination																							
SEHWEE0525	NSIDC ACG Procurement and Tracking Process	67	COTSUPG	19SEP00	20OCT00	5B	460N1EB04	D3	△ NSIDC ACG Procurement and Tracking Process																							
SEHWEE0530	NSIDC ACG Equipment Inventory and Installation	67	COTSUPG	23OCT00	29MAY01	5B	221NEB12	D3	△ NSIDC ACG Equipment Inventory and Installation																							
SEHWEE0535	NSIDC ACG Completion of Procurement	67	COTSUPG		29MAY01	5B	460N1EB04	L	◇ NSIDC ACG Completion of Procurement																							

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
SPR																																
Drop 5B																																
SEHWEE0355	LARC SPR Completion of Procurement	68	COTSUPG		16DEC99	5B	460N1EB04	L	◇ LARC SPR Completion of Procurement																							
SEHWEE0415	GSFC SPR Completion of Procurement	68	COTSUPG		16DEC99	5B	460N1EB04	L	◇ GSFC SPR Completion of Procurement																							
SEHWEE0340	LARC SPR Design and Requirements Determination	68	COTSUPG	21MAR00*	21APR00	5B	221NEB13	D3	▽ LARC SPR Design and Requirements Det																							
SEHWEE0400	GSFC SPR Design and Requirements Determination	68	COTSUPG	21MAR00*	21APR00	5B	221NEB11	D3	▽ GSFC SPR Design and Requirements Det																							
SEHWEE0345	LARC SPR Procurement and Tracking Process	68	COTSUPG	24APR00	25MAY00	5B	460N1EB04	D3	▽ LARC SPR Procurement and Tracking f																							
SEHWEE0405	GSFC SPR Procurement and Tracking Process	68	COTSUPG	24APR00	25MAY00	5B	460N1EB04	D3	▽ GSFC SPR Procurement and Tracking																							
SDSRV																																
Drop 5B																																
SEHWEE0380	GSFC SDSRV Design and Requirements Determination	69	COTSUPG	21MAR00*	21APR00	5B	221NEB11	D3	▽ GSFC SDSRV Design and Requirements																							
SEHWEE0385	GSFC SDSRV Procurement and Tracking Process	69	COTSUPG	24APR00	25MAY00	5B	460N1EB04	D3	▽ GSFC SDSRV Procurement and Tracki																							
SEHWEE0390	EDC SDSRV Equipment Inventory and Installation	69	COTSUPG	26MAY00	03JUL00	5B	221NEB10	D3	▽ EDC SDSRV Equipment Inventory ar																							
SEHWEE0395	GSFC SDSRV Completion of Procurement	69	COTSUPG		03JUL00	5B	460N1EB04	L	◇ GSFC SDSRV Completion of Procure																							
Silo/D3																																
Drop 5B																																
SEHWEE0460	GSFC D3 Design and Requirements Determination	70	COTSUPG	19MAY00*	22JUN00	5B	221NEB11	D3	▽ GSFC D3 Design and Requirements D																							
SEHWEE0480	ASF Silo/D3 Design Requirements Determination	70	COTSUPG	30MAY00*	30JUN00	5B	221NEB09	D3	▽ ASF Silo/D3 Design Requirements De																							
SEHWEE0465	GSFC D3 Procurement and Tracking Process	70	COTSUPG	23JUN00	27JUL00	5B	460N1EB04	D3	▽ GSFC D3 Procurement and Trackir																							
SEHWEE0485	GSFC Silo/D3 Procurement and Tracking Process	70	COTSUPG	03JUL00	04AUG00	5B	460N1EB04	D3	▽ GSFC Silo/D3 Procurement and Tr																							
SEHWEE0470	ASF D3 Equipment Inventory and Installation	70	COTSUPG	28JUL00	29SEP00	5B	221NEB04	D3	▽ ASF D3 Equipment Inventory a																							
SEHWEE0475	GSFC D3 Completion of Procurement	70	COTSUPG		29SEP00	5B	460N1EB04	L	◇ GSFC D3 Completion of Procu																							
SEHWEE0490	GSFC Silo/D3 Equipment Inventory Installation	70	COTSUPG	07AUG00	17NOV00	5B	221NEB11	D3	▽ GSFC Silo/D3 Equipment In																							
SEHWEE0495	GSFC Silo/D3 Completion of Procurement	70	COTSUPG		17NOV00	5B	460N1EB04	L	◇ GSFC Silo/D3 Completion c																							
SEHWEE0540	GSFC Silo/D3 Design Requirements Determination	70	COTSUPG	13MAY02*	14JUN02	5B	221NEB11	D3																								
SEHWEE0545	GSFC Silo/D3 Procurement and Tracking Process	70	COTSUPG	17JUN02	19JUL02	5B	460N1EB04	D3																								
SEHWEE0550	EDC Silo/D3 Equipment inventory and Installation	70	COTSUPG	22JUL02	31OCT02	5B	221NEB10	D3																								
SEHWEE0555	GSFC Silo/D3 Completion of Procurement	70	COTSUPG		31OCT02	5B	460N1EB04	L																								
General COTS Area																																
Drop 5B																																
SEHWEE0300	ASF Design and Requirements Determination	99	COTSUPG	29NOV99A	02DEC99A	5B	221NEB04	D3	X ASF Design and Requirements Determination																							

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
									Gantt Chart																							
SEHWEE1090	COTS Compat Matrix, Complete	99	COTSSPT		18JAN00	5B	460N1EB03	L	Gantt Chart																							
SEHWEE1130	COTS Compat Matrix Review for Follow up	99	COTSSPT	19JAN00	21JAN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE5B135	IRIXTRANS VATC UPGRADES	99	COTSUPG	02DEC99A	25JAN00	5B	221NH03B	D3	Gantt Chart																							
SEHWEE1010	COTS Compat Matrix Distribute Reqmnts to Prd SE	99	COTSSPT	25JAN00	25JAN00*	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1150	COTS Compat Matrix Attend CUT and Strategic Plan	99	COTSSPT	19JAN00	25JAN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE0305	ASF Procurement and Tracking Process	99	COTSUPG	17DEC99	27JAN00	5B	460N1EB04	D3	Gantt Chart																							
SEHWEE0170	I	99	COTSSPT	18JAN00	02FEB00*	5B	221NEB04	D3	Gantt Chart																							
SEHWEE1100	COTS Compat Matrix Prep Quarter Matrix Upd Info	99	COTSSPT	03FEB00*	03FEB00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE5B375	Failover Analysis	99	COTSSPT	29NOV99A	08FEB00	5B	221N 03B	D3	Gantt Chart																							
SEHWEE2000	COTS Cost Model Rewrite, Complete	99	COTSSPT		23FEB00*	5B	221NEB07	L	Gantt Chart																							
DVENG5B170	Regression Test COTS In PVC	99	COTSUPG	29NOV99A	03MAR00	5B	840N6H1	D3	Gantt Chart																							
DVENG5B175	Decide re combining 5B transition and Irix upg	99	COTSUPG	06MAR00	10MAR00	5B	840N6H1	D3	Gantt Chart																							
SEHWEE0160	COTS Cost Model Rewrite, Coding	99	COTSSPT	29NOV99A	13MAR00	5B	221NEB07	D3	Gantt Chart																							
SEHWEE0180	COTS Cost Model Rewrite, Documentation	99	COTSSPT	03FEB00	31MAR00	5B	221NEB07	D3	Gantt Chart																							
SEHWEE1190	COTS Compat Matrix, Complete	99	COTSSPT		31MAR00*	5B	460N1EB03	L	Gantt Chart																							
SEHWEE1200	COTS Compat Matrix Prep Quarter Matrix Upd Info	99	COTSSPT	03MAY00*	03MAY00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1210	COTS Compat Matrix Distribute Reqmnts to Prd SE	99	COTSSPT	04MAY00	04MAY00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1220	COTS Compat Matrix Compile/Enter Information	99	COTSSPT	05MAY00	31MAY00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1230	COTS Compat Matrix Review for Follow up	99	COTSSPT	01JUN00	05JUN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1240	COTS Compat Matrix Comm w/staff & vendors	99	COTSSPT	06JUN00	07JUN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1250	COTS Compat Matrix Attend CUT and Strategic Plan	99	COTSSPT	01JUN00	07JUN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1260	COTS Compat Matrix Iden/Asgn issues to SE or DEV	99	COTSSPT	01JUN00	07JUN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1270	COTS Compat Matrix Work w Vendors as needed	99	COTSSPT	01JUN00	07JUN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1280	COTS Compat Matrix Update screens, add New Info	99	COTSSPT	01JUN00	07JUN00	5B	460N1EB03	D3	Gantt Chart																							
SEHWEE1290	COTS Compat Matrix, Complete	99	COTSSPT		07JUN00	5B	460N1EB03	L	Gantt Chart																							
SEHWEE0310	ASF Equipment Inventory and Installation	99	COTSUPG	28JAN00	30AUG00	5B	221NEB04	D3	Gantt Chart																							
SEHWEE0315	ASF Completion of Procurement	99	COTSUPG		06OCT00*	5B	460N1EB04	L	Gantt Chart																							
SEHWEE0420	ORNL Design and Requirements Determination	99	COTSUPG	15SEP00*	18OCT00	5B	221NEB05	D3	Gantt Chart																							

Activity ID	Activity Description	COTS	ACTP	Early Start	Early Finish	DROP	WBS	EVMM	2000												2001											
									Gantt Chart Area																							
SEHWEE0425	ORNL Procurement and Tracking Process	99	COTSUPG	16NOV00	21DEC00	5B	460N1EB04	D3	[Gantt bar for SEHWEE0425]																							
SEHWEE0430	ORNL Equipment inventory and Installation	99	COTSUPG	22DEC00	12JUL01	5B	221NEB05	D3	[Gantt bar for SEHWEE0430]																							
SEHWEE0435	ORNL Completion of Procurement	99	COTSUPG		12JUL01*	5B	460N1EB04	L	[Gantt bar for SEHWEE0435]																							
Drop 55 (Irix 6.5.x)																																
SECOT5B815	Develop the first draft of IRIX upgrade document	99		29NOV99A		55	223NH5501	D2	[Gantt bar for SECOT5B815]																							
SECOT5B825	Develop the final copy of IRIX upgrade plan	99		17DEC99	29FEB00	55	223NH5501	D2	[Gantt bar for SECOT5B825]																							
SECOT5B875	Develop draft copy of IRIX mitigation document	99		01MAR00	02MAY00	55	223NH5501	D2	[Gantt bar for SECOT5B875]																							
SECOT5B885	Develop final copy of IRIX mitigation document	99		03MAY00	30JUN00	55	223NH5501	D2	[Gantt bar for SECOT5B885]																							
SECOT5B865	55 PSR	99			10JUL00*	55	223NH5501	D2	[Gantt bar for SECOT5B865]																							

Appendix F. Hardware Procurements and Rationale

PURCHASES/UPGRADES FOR NOV99-JUL00

Science Data Server

FTP User Pull RAID Capacity Upgrades

ECS plans to acquire the FTP User Pull Disk upgrades for GSFC, LaRC, and NSIDC for the Nov99 – Jul00 timeframe, as well as the rest of the upgrades for FTP User Pull disk out through 2002. FTP User Pull upgrade disk for EDC, for 1999 through 2002 was already purchased as one of the Early Buy items.

Upgrades to the disk space on the Access Control & Management Hardware Subsystems (ACMHW) at the DAACs with regard supporting electronic distribution of data was determined using Table C-2, User Distribution Rates via Network and via Physical Media, of the F&PRS Rev. C. The table shows the GB/day distribution rate via the network for each topic for each DAAC. For purposes of disk space requirements, the numbers in this table were multiplied by two, so that each DAAC would have the equivalent of two days worth of disk storage available for housing User Pull data.

The calculations were derived by purchasing GB of disk space as needed, per year Topic, and accumulating the GB's as they are purchased and rolling them into the calculations for the following year. As part of the rolling calculations, current GB's on the floor for User Pull are taken into account. A standard assumption is that 9GB disk will be the form factor for calculating the number of disks needed, however, this is dependent on each DAAC. For instance, in calculating GSFC requirements, an 18GB disk is used as the form factor. Because these disks will be part of RAID units, an overhead of one RAID disk in five is used to support RAID parity information. Also, as GB's of space are calculated, disk controllers and racks are also required to be purchased as necessary.

ACMHW Processor Upgrades

For the ACMHW suite at the GSFC and EDC DAACs, upgrades were derived based on ECS calculations of processing requirements and data volumes for the ECS system, during AM-1, but especially when PM-1 processing begins. By the time of PM-1 launch, the design forecasts the splitting of the processing load in the ACMHW subsystem by mission. In other words, having one SGI/SUN pair of machines allocated to AM-1 data processing and another pair dedicated to the PM-1 data processing.

The current ACMHW suite of machines contains SGI Challenge class servers. The current plan is to purchase an SGI Origin class machine to replace the SGI Challenge

class machine for AM-1 processing, and purchase an SGI Origin class machine to handle the new PM-1 processing load. Appropriate Origin machines for failover will be purchased as well. The additional SUN server purchased at each site would be a SUN Enterprise class machine (to complete the PM-1 SGI/SUN pair). Any SGI Challenge servers replaced at either GSFC or EDC as a result of the Origin purchase can be redeployed for other purposes.

Science Processing

The SPRHW suites at the GSFC, LaRC, and EDC DAACs will be upgraded as follows:

GSFC: SGI Origin class machine and associated RAID.

EDC: RAID storage upgrades

LaRC: SGI Origin class machine and associated RAID

These upgrades to the Science Processing suites were derived based on ECS calculations of processing requirements for the ECS system, during AM-1, but especially when PM-1 processing begins.

Archive

The DRPHW suites at the GSFC, LaRC, NSIDC, and EDC DAACs will be upgraded as follows:

GSFC: SGI Origin class machines and associated RAID, and a SUN Ultra 60 Server.

EDC: SGI Origin class machine and associate RAID, and two Archive drives.

LaRC: SUN Ultra 60 Server and Sun Ultra 10 workstations, D3 Media

NSIDC: One SUN Ultra 60 Server.

These upgrades to the Data Repository suites were derived based on ECS calculations of data volumes for the ECS system, during AM-1, but especially when PM-1 archiving begins.

Distribution

The DIPHW suites at the GSFC, LaRC, NSIDC, and EDC DAACs will be upgraded as follows:

GSFC: Six DLT drives; and 8MM tape, CD-ROM, and DLT media as necessary.

EDC: Two STK 9730 DLT Library; six DLT Drives; and 8MM tape, CD-ROM, and DLT media as necessary.

LaRC: One STK 9730 DLT Library, and 8MM tape, CD-ROM, and DLT media as necessary.

NSIDC: Two STK 9730 DLT Library; four DLT Drives; and 8MM tape, CD-ROM, and DLT media as necessary.

These upgrades to the Data Repository suites were derived based on ECS calculations of distribution requirements for the ECS system during AM-1.

ASF DAAC

Purchases for ASF DAAC include two Ultra 60 Servers, 8mm media, CD-ROM media, and DLT media. These purchases for ASF will occur unless otherwise directed.

ORNL DAAC

There are no planned purchases for the ORNL DAAC during this timeframe.

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Appendix G. COTS Status Table

The COTS status table is presented to management and the customer on a weekly basis. The information captured in each of the columns for each product is described below:

1. Product Name: Name of the COTS product being upgraded.
2. Baseline Version: Version of the product currently on the system and baselined by CM.
3. End of Support: Time that the vendor will no longer provide support for this version of the product.
4. New Version: Version of the COTS product to which ECS is upgrading.
5. End of Support: Time that the vendor will no longer provide support for this version of the product.
6. Pre-Integration Test RE: Responsible Engineer assigned to test the product in the IDG.
7. Integration Test RE: Responsible Engineer assigned to test the product in the Functionality Lab.
8. Test RE: Responsible Engineer assigned to test the product in the VATC.
9. Other Tests: Tests for special case products that aren't tested in the normal cycle.
10. Upgrade Rationale: The rationale/reasons for upgrading this product.
11. Need Date: Date the product has to be tested, verified, and deployed to the customer for installation.
12. Plan Date: Date from the product plan that the product will complete testing and PSR for turnover to the customer.
13. Subsystem Impacted: The primary subsystem that uses this product, and is also assigned as the 'owner' of the product.
14. COTS Dependencies: Other products that interface with this product and may be impacted by the change in version, etc.
15. Custom Code Usage: Custom code subsystems that interface with this product that will have to have each interface re-verified with the upgraded version of the product during testing.
16. Custom Code Dependencies: Custom Code Products that are impacted by this upgrade that will have to have coding changes or modifications.
17. Status: Current status of activities and progress towards the product upgrade plan in P3.

COTS Weekly Status Sheet

1

PRELIMINARY COTS STATUS

12/17/1999

Product Name	Baseline Version	End of Support	New Version	End of support	Pre-Integr Test RE (IDG)	Integration Test RE (Fnc Lab)	Test RE (VATC)	Other Tests	Upgrade Rationale	Need Date	Plan Date	Subsystem Impacted	Custom Code Usage	Custom Code Dependencies	Status
GENERAL UPGRADES															
Emacs	19.30.9	NA Freeware	20.3	NA Freeware	M. Mauthe	M. Mauthe	TBD		Y2K	Dec-99		DPS	DPS	None	Built on SUN, Now needed on SGI and HP
(NCSA) HDF	4.1.R1		4.1.R3		D. Arrington	D. Arrington	J. Rattigan	PGE Testing	Toolkit Requirement	5B	**	TKT, INGEST, SDSRV, SSI&T(PDPS)	TKT, INGEST, SDSRV, SSI&T (PDPS)	TKT, INGEST, SDSRV, SSI&T(PDPS)	CCR approved on 11/30 to install in the IDG Cell. To be installed next week in IDG cell
HP O/S Security and Y2K Patch	10.2				T. Hasandka	T. Hasandka			Y2K and Leap Year Patch	Feb	30-Jan				CCR approved on 11/30 to install in the IDG Cell. To be installed next week in IDG cell
HP Open View	4.1	Still supported, but compilers are old, and require continual patching	6	None	L. Swentek	L. Swentek	V. Khatri		Vendor Support	Mar-00	Jan-00	MSS	MSS	None	M&O cutoff due to launch moves deployment to 5B. Will be a part of TO #1.
IMSL	2.0 C Libraries		C version 3 libraries, Fortran version 4	product manager to determine end-of support, will send out a letter of notification	D. Arrington	D. Arrington	J.Zhuang		Y2K	Dec-99	Dec-99	Toolkit	Toolkit	None, (Used only by PGEs)	CM errors detected during VATC checkout. Retesting initiated within the VATC. Getting installed in VATC
Intelligent Query (IQ)	Not B/L for DAACs	N/A	5.5	none	Royal White	Royal White	V. Khatri		Support for DAAC DB reporting requirements - Providing most current version	Mar-00	Jan-00	DDM	None	None	Product not needed until 5B. CCR for VATC install on 11/29.
PERL	5.003	NA - Freeware	5.005-03	NA - Freeware	Rich Snyder	Rich Snyder	E. Lamptey		DAAC requested upgrade		06-Jan	MSS			During the build process, problems were detected by development. RTSC and development are investigating.
Secure Shell	1.3.3	No end of support	1.3.6 & 2.0.12	No end of support	B. Peters	B. Peters	B. Peters		Functionality Improvements	Mar-00	20-Jan	MSS	None	None	Byron Peters and RTSC are working issues associated with the new media.
SGI IRIX Y2K Patch	6.2				T. Hasandka	T. Hasandka	TBD		Y2K/Leap Year Patch	Feb	30-Jan				CCR for IDG Cell Install

* Most Products have OS Dependencies

** Linked into the executables, and deployed with the 5B custom code, (No PSR)

COTS Weekly Status Sheet

2

PRELIMINARY COTS STATUS

12/17/1999

Product Name	Baseline Version	End of Support	New Version	End of support	Pre-Integr Test RE (IDG)	Integration Test RE (Fnc Lab)	Test RE (VATC)	Other Tests	Upgrade Rationale	Need Date	Plan Date	Subsystem Impacted	Custom Code Usage	Custom Code Dependencies	Status
Sgi POSIX Thread Patch	NA	NA	NA	NA	Ray Milburn	Ray Milburn	L. Jallela	Mini DAAC	5B Thread Safe Tool. Kit require change to both SCF & DAADC Toolkit	Mar-00	Jan-00	TKT	TKT	TKT	To be merged with the SGI IRIX Y2K Patch. Goes away
SQR	N/A	New Vendor/Support under negotiation	5.0	None	Royal White	Royal White	V. Khatri		Availability/Support being negotiated	Mar-00	Jan-00	DDM	None	None	Product not needed until 5B. Dry run test demo planned for 12/9.
Sybase Open Client (Sun and HP)	10.0.4/11.1.0	10.01 was end of life June 1998/11.1 line of code permanently superceded by 11.1.1	11.1.1	None	Royal White	Royal White	J. Rattigan		Vendor Support & Version consistency across all platforms. 10.0.4 is not Y2K, EDS checking	Jan	**	DDM	Most Subsystems	Runtime Libraries linked by ECS code. May need config parameter changes	Product being moved to 5B deployment. Activities suspended to a projected mid January restart.
Sybase Central	NA	NA	3.0.0	TBD	R. White	R. White	V. Khatri		New Requirement: ASTER GDS order Tracking plus monitoring of all servers	5B	Dec	MSS			VATC installation CCR approved 12/1. To be installed by 12/13
Sybase Replication Server	NA	NA	11.5.1	TBD	R. White	R. White	V. Khatri		New Requirement: ASTER GDS order Tracking	5B	Dec	MSS	Mss	MSS	VATC installation CCR approved 12/1. To be installed by 12/13
Tivoli	3.0/3.1	Will be announced when version 4.0 is released (end of the year)	3.6		L. Swentek/ R. Synder	L. Swentek/ R. Synder	V. Khatri		Vendor Support	Mar-00	Dec	MSS		None	Testing in the SMC has been completed. VATC testing is continuing. To be completed by 12/10/99
IRIX 6.5 UPGRADE: STAND ALONE PRODUCTS															
Clearcase	3.1.1		3.2.1		L. Swentek, R. Gorsky, A. Capati	L. Swentek, R. Gorsky, A. Capati	TBD		Needed for Irix 6.5 and Solaris 7	Dec-15 in PVC; DAAC Mar	Mar	MSS, SED-CM in Landover	None	None	Clearcase Support Group conducted the upgrade to 6.5 on protog2. MSS coordinating with CCSG.
Dascom DCE Cell Manager	1.6.2		TBD		K Bugenhagen	K Bugenhagen	TBD		Needed for Irix 6.5	Mar-00	Mar-00	IDG	None	None	IBM bought DASCOM. Now uses JAVA threads, which is a problem for HPs. Under investigation
DCE SGI IRIX (Origin Platforms)	6.4	In Maintenance Mode/To be retired 6/1/1999	6.5		T. Hasandka	T. Hasandka	M. Molinet		Vendor Support	Jul-00	May	IDG	STMGT, INS, MSS, DPS, IDG	All	Readiness Review is planned for 12/14.

* Most Products have OS Dependencies

** Linked into the executables, and deployed with the 5B custom code, (No PSR)

COTS Weekly Status Sheet

3

PRELIMINARY COTS STATUS

12/17/1999

Product Name	Baseline Version	End of Support	New Version	End of support	Pre-Integr Test RE (IDG)	Integration Test RE (Fnc Lab)	Test RE (VATC)	Other Tests	Upgrade Rationale	Need Date	Plan Date	Subsystem Impacted	Custom Code Usage	Custom Code Dependencies	Status
DCE SGI IRIX (Challenge Platforms)	6.2	In Maintenance Mode/To be retired 7/1/2000	6.5		T. Hasandka	T. Hasandka	M. Molinet		Vendor Support	Jul-00	May	IDG	STMG, INS, MSS, DPS, IDG	All	Readiness Review is planned for 12/14.
IMSL			Fortran - 4, C-3		D. Arrington	D. Arrington	J. Zhuang		IMSL libraries for IRIX 6.5	Dec-15 in PVC; DAAC Jul	May				Build in the PVC on 11/18.
Netscape Communicator	4.51		4.7		R. Samborsky	R. Samborsky	V. Khatri		Needed for Irix 6.5	Dec-15 in PVC; DAAC Mar	Feb	CLS, IDG	None	None	Maryellen evaluating capabilities of a new 4.5.1 bundle in satisfying 6.5 requirements
PCP	1.2		2.1		Alla Lake	Alla Lake	TBD		Needed for Irix 6.5	Coincident with GSFC upgrade	May	None	None	None	Being deferred because it is only utilized at GSFC
SGI Database Accelerator							J. Rattigan		Needed for Sybase ASE 11.5.1	Dec-15 in PVC; DAAC Apr	TBD				Evaluation is underway, product may be removed.
Visual Workshop	2.1	No longer Supported	3		K Bugenhagen	K Bugenhagen	TBD		Needed for Irix 6.5. Vendor Support. Y2K.	Dec-15 in PVC; DAAC Mar	Feb	All	All Solaris	All	Planning in progress
IRIX 6.5 UPGRADE: PRODUCTS REQUIRING CUSTOM CODE REBUILD															
BMC/Patrol SNMP Toolkit	1.0		1.7		L. Swentek	L. Swentek	V. Khatri		Dev tool only. Will be needed if we ever rebuild the agent. Do we need it?	DAAC - Apr	Feb	MSS	MSS	MSS	Planning is in progress. Working with vendor to obtain product media. Media arrived on 12/8/99
HDF Libraries built on 6.5	4.1r1				Darryl Arrington	Darryl Arrington	L. Jalleta		Needed for Irix 6.5	Dec-15 in PVC; DAAC May	May				Product installed in the PVC. During build, a problem was detected which is fixed.
Rogue Wave Db Tools.h++	2.1.1		3.1.4		K Bugenhagen	K Bugenhagen	M. Molinet		Needed for Irix 6.5 and Solaris 7	Dec-15 in PVC	**	PDPS, MSS, IDG, IOS, DMS	PDPS, MSS, IDG, IOS, DMS	PDPS, MSS, IDG, IOS, DMS	Testing is underway in the IDG Call
Rogue Wave Tools.h++	7.0.2		7.0.b		K Bugenhagen	K Bugenhagen	M. Molinet		Needed for Irix 6.5 and Solaris 7	Dec-15 in PVC	**	All	All	All	Testing is underway in the IDG Call

* Most Products have OS Dependencies

** Linked into the executables, and deployed with the 5B custom code, (No PSR)

COTS Weekly Status Sheet

4

PRELIMINARY COTS STATUS

12/17/1999

Product Name	Baseline Version	End of Support	New Version	End of support	Pre-Integr Test RE (IDG)	Integration Test RE (Fnc Lab)	Test RE (VATC)	Other Tests	Upgrade Rationale	Need Date	Plan Date	Subsystem Impacted	Custom Code Usage	Custom Code Dependencies	Status
Rogue Wave: Tools Pro			1.1.1		T. Hasandka	T. Hasandka	M. Molinet		Old versions not certified with current COTS (Sun O/S, SGI O/S, Sun Compilers, Sybase OC, etc.	In the PVC by Dec-15	**	All	All	All	Readiness Review is planned for 12/16. Awaiting new media.
Solaris Compilers	4	No longer Supported	4.2	TBD	K Bugenhagen	K Bugenhagen	E. Lamptey		Vendor Support and Y2K	Jun-00	**	All	All Solaris	All	Readiness Review is planned for 12/16.
Sybase Adaptive Server	11.0.3.3	06/01/2000	11.5.1	12/03/2000	Royal White	Royal White	V. Khatri		Irix 6.2 and Irix 6.5 compatible, Vendor Support and performance	Apr-00	Apr-00	All	Most Subsystems	Runtime Libraries linked by ECS code; May need config parameter changes	Functionality Lab testing to start by 12/15. Checking Build problem with the vendor
IRIX 6.5 UPGRADE: PRODUCTS TIED TO THE O/S															
BDS	2		2.1		Byron Peters	Byron Peters	J. Rattigan		Needed for Irix 6.5	Dec-15 in PVC; DAAC Jul	May	PDPS, Ingest, Stmtg	IDG	None	B. Peters is coordinating with Development on the test plans. Installed in PVC
HIPPI SW	2.2		3.3.1		Byron Peters	Byron Peters	B. Peters		Needed for Irix 6.5	Dec-15 in PVC; DAAC Jul	May	PDPS, Ingest, Stmtg	IDG	None	Will be checked out in the PVC upon installation. Installed in PVC
IDL	5.1		5.3		M. Mauthe	M. Mauthe	L. Jallieta		Needed for Irix 6.5 and Solaris 7	Dec-15 in PVC; DAAC Jul	May	DPS	DPS	DPS	Being planned. Vendor indicated new version won't be released until late Dec. PVC install will slip. Development and Test indicate PVC integration can move forward without this product.
Kerbtet built on 6.5	1				L. Swentek	L. Swentek	V. Khatri		Needed for Irix 6.5	Dec-15 in PVC; DAAC Jul	May				Product may soon be deleted from ECS
Perl built on 6.5	5.003				L. Swentek	L. Swentek	E. Lamptey		Needed for Irix 6.5	Dec-15 in PVC; DAAC Jul	May				Built and turned over to the PVC. CCR for next week into PVC.
Purify	4		4.5.1 on Sun 4.5 on SGI, and 4.0 for HP's		T. Hasandka	T. Hasandka	V. Khatri			Dec-15 in PVC; DAAC Jul	TBD	IDG	All	None	For SGI's, there is a need to upgrade to Purify 4.5 or later in order to work with IRIX 6.5. Awaiting BETA media. Authorized to download the beta version.
Secure Shell commercial client and server built on 6.5	1.3.3				B Peters	B Peters	B. Peters		Needed for Irix 6.5	Dec-15 in PVC	May				Installation in the PVC is underway. CCR for version 2.0

* Most Products have OS Dependencies

** Linked into the executables, and deployed with the 5B custom code, (No PSR)

COTS Weekly Status Sheet

PRELIMINARY COTS STATUS

5

12/17/1999

Product Name	Baseline Version	End of Support	New Version	End of support	Pre-Integr Test RE (IDG)	Integration Test RE (Fnc Lab)	Test RE (VATC)	Other Tests	Upgrade Rationale	Need Date	Plan Date	Subsystem Impacted	Custom Code Usage	Custom Code Dependancies	Status
TCL/Atk built on 6.5	8.0_PL_4				L. Swentek	L. Swentek	V. Khatri		Needed for Irix 6.5	Dec-15 in PVC: DAAC Jul	May				Installation in the PVC is underway. CCR for version 2.0
TCP Wrappers built on 6.5	7.4				L. Swentek	L. Swentek	V. Khatri		Needed for Irix 6.5	Dec-15 in PVC: DAAC Jul	May				Built in the PVC on 11/9.
Tripwire built on 6.5	1.2				L. Swentek	L. Swentek	V. Khatri		Needed for Irix 6.5	Dec-15 in PVC: DAAC Jul	May				Built in the PVC on 11/9.
POST IRIX 6.5 UPGRADE															
Sun Solaris (O/S)	2.5.1	Jun-00	2.7		K Bugenhagen	K Bugenhagen	M. Molinet		Vendor Support	Aug-00	Jul-00	All	All Solaris	All	Planning in process

* Most Products have OS Dependancies

** Linked into the executables, and deployed with the 5B custom code, (No PSR)

Appendix H. COTS Compatibility Matrix

The COTS Compatibility Matrix is a Microsoft Access Database that captures information needed for planning upgrades to COTS products, including operating system products. Information is available from the COTS Compatibility Matrix on current COTS/Freeware products as well as future product versions. The information is updated quarterly. The COTS Compatibility Matrix provides information on the following key area related to COTS Upgrade Planning:

- Current Products End-of-Life and End-of-Support dates to identify when a product is recommended to be upgraded because of vendor support levels.
- Future Product versions, with associated availability dates, and OS platform support.
- Dependency information identifying if an OS version, database version, compiler version, other COTS product, etc., is required to be considered in planning the upgrade.
- Y2K information on products.

The Table below depicts a snap shot of the COTS Compatibility Matrix, with columns selected to show the product title, version, deployment category, SW type, End-of-Life date, End-of-Support date, and dependencies. The remainder of the information about each product was not selected for this report. The Microsoft Access Database provides a lot flexibility in grouping data/information about the products in a relational form.

Sample COTS Compatibility Matrix Report

Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
Acrobat Reader for Solaris/SGI	3.0	OPS	Freeware	version 4 avail.	version 4 avail.	OS
ACSLs	5.3	OPS	COTS	No EOL date	12/31/2008	OS
AMASS	4.10.1	OPS	COTS	No EOL announced	No EOS announced	OS
Anlpassword	2.3	OPS	Freeware	freeware	freeware	OS/Perl
AutoSys	3.4.2	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase Adaptive Server/Sybase OpenClient
AutoSys Remote Agent	3.4.2	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase Adaptive Server/Sybase OpenClient
AutoSys Xpert	3.4.2	OPS	COTS	No EOL announced	No EOS announced	OS
BDS	2.0p0	OPS	COTS	same as IRIX 6.2	7/2000	OS/HiPPI SW/NFS
BuilderXcessory	5.0.3	OPS	COTS	No EOL announced	No EOS announced	OS/compiler versions. Sun 4.2/5.0 compilers
BuilderXcessory Epak/GraphPak	3.0	OPS	COTS	No EOL announced	No EOS announced	OS/compiler versions. Sun 4.2/5.0 compilers
Cabletron Ethernet Hub BOOTPROM	1.33.02	OPS	Firmware	No EOL announced	No EOS announced	Cabletron Hub HW
Cabletron Ethernet Hub Flash Image	1.33.02	OPS	Firmware	No EOL announced	No EOS announced	Cabletron Hub HW
Cisco Router IOS	11.3	OPS	Firmware	No EOL announced	No EOS announced	Cisco Router HW
Cisco Router Release SE (fcl)ROM: GS	11.3	OPS	Firmware	No EOL announced	No EOS announced	Cisco Router HW
Cisco Router System Bootstrap	11.3	OPS	Firmware	No EOL announced	No EOS announced	Cisco Router HW
ClearCase	3.1.1	OPS	COTS	12/31/1998	12/31/2000	OS/GNU Make compatibility
Crack	4.1	OPS	Freeware	freeware	freeware	OS/Perl
DB Vision	3.1.8	OPS	COTS	12/1999	10/31/02	OS/Sybase Adaptive Server
DBTools.h++/CT.lib	2.1.1	OPS	COTS	at EOL status/Best	at EOS status/Best Effort	OS/Sybase OpenClient/Tools.h++/OS C++

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Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
DBXcessory	1.5	OPS	COTS	No EOL date	No EOS announced	OS/Sybase Adaptive Server
DCE Application Developer Toolkit for HP	1.5	OPS	COTS	same as DCE for OS	same as DCE for OS	OS/OSF DCE Version
DCE Application Developer Toolkit for SGI	1.1c	OPS	COTS	same as DCE for OS	same as DCE for OS	OS/OSF DCE Version
DCE Application Developer Toolkit for Sun	1.1	OPS	COTS	same as DCE for OS	same as DCE for OS	OS/OSF DCE Version
DCE Cell Manager (host agent-client)	1.6.2	OPS	COTS	No EOL announced	No EOS announced	OS/OSF DCE version
DCE Cell Manager (management)	1.6.2	OPS	COTS	No EOL announced	No EOS announced	OS/OSF DCE version
DCE Client for HP	1.5	OPS	COTS	6/2002	No EOS announced	OS/OSF DCE Version/DCE Cell Manager
DCE Client for SGI	1.1c	OPS	COTS	7/2000	No EOS announced	OS/OSF DCE Version/DCE Cell Manager
DCE Client for Sun	1.1	OPS	COTS	No EOL announced	No EOS announced	OS/OSF DCE Version/DCE Cell Manager
DCE Name Server	1.1	OPS	COTS	No EOL announced	No EOS announced	OS/OSF DCE version
DCE Security Server	1.1	OPS	COTS	No EOL announced	No EOS announced	OS/OSF DCE Version/DCE Cell Manager
DDTS	4.1	OPS	COTS	No EOL announced	No EOS announced	OS/FLEXIm
EMACS for HP	19.31.1	OPS	Freeware	freeware - Not most	Not most current version	OS/Perl
EMACS for SGI	19.30.9	OPS	Freeware	freeware - Not most	Not most current version	OS/Perl
EMACS for Sun	19.28	OPS	Freeware	freeware - Not most	Not most current version	OS/Perl
Exabyte Driver	1.3	OPS	Freeware	Unsupported	Unsupported	OS
FLEXIm	6.1	OPS	COTS	No EOL announced	No EOS announced	OS/licensed products
Forcheck	12.30	OPS	COTS	No EOL announced	No EOS announced	OS
Fore Powerhub FDDI Switch Module	7fp-1.13(s)	OPS	Firmware	9/15/1999	3/15/2001	FDDI Switch HW
Fore Powerhub FDDI Switch Module	8fddi-PH_	OPS	Firmware	9/15/1999	3/15/2001	FDDI Switch HW
Fore Powerhub FDDI Switch Packet	pe2-PH_F	OPS	Firmware	9/15/1999	3/15/2001	FDDI Switch HW

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Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
Fore Powerhub FDDI Switch Packet	pe2p-2.0.0	OPS	Firmware	9/15/1999	3/15/2001	FDDI Switch HW
GhostView	1.5	OPS	Freeware	freeware - Not most	Not most current version	OS
GNU Unzip	1.2.4	OPS	Freeware	freeware	freeware	OS
GNU Zip	1.2.4	OPS	Freeware	freeware	freeware	OS
HDF Libraries	4.1r1	OPS	Freeware	freeware	freeware	OS
HiPPI Adapter Firmware	27161144	OPS	Firmware	No EOL announced	12/31/2008	HiPPI SW/BDS
HiPPI SW	2.2	OPS	COTS	No EOL announced	7/2000	OS/BDS/NFS
HiPPI Switch EEMM	2.05	OPS	Firmware	No EOL announced	12/31/2008	HW
HiPPI Switch HW/Firmware SCC	2.23	OPS	Firmware	No EOL announced	12/31/2008	HW
HP RAID Flare Code	8.61	OPS	Firmware	No EOL announced	No EOS announced	OS/HW
HP RAID PROM	1.63	OPS	Firmware	No EOL announced	No EOS announced	OS/HW
HP Softbench for C++	5.25	OPS	COTS	No EOL announced	No EOS announced	OS/OS patches
HP-UX	10.20	OPS	COTS	06/01/2002	06/01/2003	COTS for OS
IDL	5.1	OPS	COTS	4/2000	4/2000	OS
IMSL C Numeric Libraries	2.0	OPS	COTS	No EOL announced	No EOS announced	OS/SGI Compilers
IMSL Fortran Numeric Libraries	3.0	OPS	COTS	No EOL announced	No EOS announced	OS/SGI Compilers
IQ Report Writer	5.1	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase Adaptive Server/Sybase OpenClient
IRIX	6.2	OPS	COTS	7/1/2000	7/1/2000	COTS for OS
Java Runtime Environment	1.1.7B	OPS	Freeware	freeware	freeware	OS
JetAdmin for PC	2.3.3	OPS	Freeware	freeware	freeware	OS
JetAdmin for Sun	d.02.10	OPS	Freeware	freeware	freeware	OS

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Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
Kerbnnet	1.0	OPS	COTS	Unsupported	Unsupported	OS
Legato Networker Client	5.5	OPS	COTS	No EOL announced	No EOS announced	OS
Legato Networker Server	5.5	OPS	COTS	No EOL announced	No EOS announced	OS
Microsoft Access	7.0/Win95	OPS	COTS	No EOL announced	No EOS announced	OS/DBMS
Microsoft Office Professional	Win95	OPS	COTS	No EOL announced	No EOS announced	OS/Windows
NCDware	4.1.141	OPS	COTS	No EOL announced	No EOS announced	OS
Net.h++	7.02	OPS	COTS	at EOL Status/Best	at EOS Status/Best	OS/Tools.h++/OS C++ compiler versions
Netscape Communicator	4.5.1	OPS	COTS	10/16/99	at EOS Status/Best	OS
Netscape Enterprise Server	3.6	OPS	COTS	No EOL announced	No EOS announced	OS
Nortel Networks FDDI Concentrator	2.2.4/2.3.1	OPS	Firmware	5/31/1998	migration to Cisco	HW
OpenView Network Node Manager	4.1	OPS	COTS	No EOL announced	No EOS announced	OS
Percon PT-2000 Portable Application	3.4	OPS	Firmware	No EOL announced	No EOS announced	Percon BarCode Scanner HW
Performance Co-Pilot Collector	1.2	OPS	COTS	same as IRIX 6.2	7/2000	OS
Performance Co-Pilot Monitor	1.2	OPS	COTS	same as IRIX 6.2	7/2000	OS
PERL	5.003	OPS	Freeware	freeware	freeware	OS
Pure Coverage	1.2	OPS	COTS	No EOL announced	No EOS announced	OS
Purify for SGI	4.0.1	OPS	COTS	No EOL announced	No EOS announced	OS/C++ Compilers/Visual Workshop
Purify for Sun	4.5.1	OPS	COTS	No EOL announced	No EOS announced	OS/C++ Compilers/Visual Workshop
Remedy ARS (Action Request Server)	3.2/3.2.1	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase Adaptive Server
SATAN	1.1.1	OPS	Freeware	freeware	freeware	OS/Perl
SGI C Compiler	7.2.1	OPS	COTS	No EOL announced	No EOS announced	OS/Other SGI compiler versions

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Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
SGI C++ Compiler	7.2.1	OPS	COTS	No EOL announced	No EOS announced	OS/Other SGI compiler versions/RogueWave
SGI Fortran 77 Compiler	7.2.1	OPS	COTS	No EOL announced	No EOS announced	OS/Other SGI compiler versions
SGI Fortran 90 Compiler	7.2.1	OPS	COTS	No EOL announced	No EOS announced	OS/Other SGI compiler versions
SGI ProDev Workshop	2.7	OPS	COTS	No EOL announced	No EOS announced	OS/compiler versions
SGI SCSI RAID Driver	2.3	OPS	COTS	same as IRIX 6.2	7/01/200	SGI Phoenix Controllers/SGI RAID
SGI SCSI RAID FlareCode	9.55.1	OPS	Firmware	6/1999	6/2004	OS/HW
SGI SCSI RAID PROM	1.73	OPS	Firmware	6/1999	6/2004	OS/HW
Solaris	2.5.1	OPS	COTS	est. 4/1/2000	est. 4/1/2005	COTS products/StorEdge Volume
Solaris (for ACSLS)	2.6	OPS	COTS	No EOL date	No EOS announced	COTS product availability
SPARCompiler C	4.0	OPS	COTS	4/22/1999	4/22/2003	OS
SPARCompiler C++	4.1	OPS	COTS	4/22/1999	4/22/2003	OS
SPARCompiler Fortran 77	4.0	OPS	COTS	No EOL announced	No EOS announced	OS
SQR Workbench	4.3.4	OPS	COTS	No EOL announced	No EOS announced	Sybase Adaptive Server/Sybase OpenClient
SQS (Spatial Query Server)	3.2.2	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase OpenServer
ssh secure shell commercial (PC)	1.1	OPS	COTS	at EOL Status	at EOS Status	OS
ssh secure shell commercial (UNIX)	1.3.3	OPS	COTS	at EOL Status	at EOS Status	OS
ssh secure shell freeware	1.2.26	OPS	Freeware	freeware	freeware	OS
STK RS (D3 drive firmware)	4.2.1	OPS	Firmware	No EOL announced	12/31/2008	STK Powderhorn
STK SCSI RAID Flare Code	9.55.1	OPS	Firmware	No EOL announced	12/31/2008	
STK SCSI RAID PROM	1.73	OPS	COTS	No EOL announced	No EOS announced	
STK SSU (CTU firmware)	5.1.1	OPS	Firmware	No EOL announced	12/31/2008	STK Powderhorn

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Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
STK/SGI D3 Controller Microcode	9.09	OPS	Firmware	No EOL announced	12/31/2008	OS/HW
StorEdge Volume Manager	2.6	OPS	COTS	No EOL announced	No EOS announced	OS
Sun DiskSuite	4.1	OPS	COTS	No EOL announced	No EOS announced	OS
Sybase Adaptive Server	11.0.3.3	OPS	COTS	6/30/2000	6/30/2000	OS/Sybase OpenClient/Sybase Replication
Sybase Central	3.0.0	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase ASE version/OpenClient Version
Sybase Open Client/C for HP	11.1.0/10.	OPS	COTS	6/1998	6/1998	OS/Sybase Adaptive Server
Sybase Open Client/C for SGI	11.1.1	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase Adaptive Server
Sybase Open Client/C for Sun	11.1.0/10.	OPS	COTS	6/1998	6/1998	OS/Sybase Adaptive Server
Sybase Replication Server	11.0.3	OPS	COTS	06/31/2000	06/31/2000	OS/Sybase Adaptive Server
Sybase SQL Monitor	11.5.1	OPS	COTS	12/31/2000	No EOS announced	OS/Sybase Adaptive Server/Sybase Open Client
TCL/Tk	8.0 patch	OPS	Freeware	freeware - more recent	freeware - more recent	PERL/needs recompile for new OS
TCPWrappers	5.22.0	OPS	Freeware	freeware	freeware	OS
TextBridge Pro	Pro96 for	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Client: Admin	3.0	OPS	COTS	No EOL announced	No EOS announced	OS/Sybase
Tivoli Client: Courier	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Client: Ent Console Log	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Client: Mgt Platform	3.1	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Client: Sentry	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Courier	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Ent Console Log Adapter	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Ent Console RDBMS	3.0	OPS	COTS	No EOL announced	No EOS announced	OS

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Current Product	Version	Deploy	SW Type	End-of-Life Date	End-of-Support Date	Dependencies
Tivoli Server: Enterprise Console	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Mgt Platform	3.1	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Sentry	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: T/EC Adapter	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: T/EC Rule Bld	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Universal Monitor	3.0	OPS	COTS	No EOL announced	No EOS announced	OS
Tivoli Server: Unix Monitors	3.0	OPS	COTS	No EOL date	No EOS announced	OS
Tools.h++	7.02	OPS	COTS	at EOL status	at EOS Status	OS/Tools.h++/OS C++ compiler versions
Tools.Pro.h++	1.4 (to be	OPS	COTS	No EOL announced	No EOS announced	OS/Tools.h++/OS C++ compiler versions
Tripwire	1.2	OPS	Freeware	Unsupported	Unsupported	OS/Compilers (C language)
Visual Workshop C++	2.1	OPS	COTS	4/22/1999	4/22/2003	OS/Versioning of stand-alone SPARCCompilers
Windows	95	OPS	COTS	No EOL announced	No EOS announced	MS Office versions/Windows App versions
XRP Accell	2.0.7.2.0	OPS	COTS	at EOL status	at EOS Status	OS/XRP-II
XRP-II	3.1.2	OPS	COTS	No EOL announced	No EOS announced	OS/ACCELL-Unify
Zebra BarOne Platinum	4.3	OPS	COTS	No EOL announced	No EOS announced	OS

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Appendix I. IRIX Upgrade Risk Table

The Risks that have been identified to date are included in the table below. Each risk has been assigned an identifier number. As a risk is identified it is presented to the COTS Core team for consideration. If it is accepted, it is assigned a Responsible Individual (RI), who will be responsible for monitoring, statusing, developing the risk mitigation plan, and the criteria that will have to be met to consider the risk closed. The RI is responsible for providing updates to the Risk Table on a weekly basis and reporting on the progress made during the week on mitigating the risk.

Risk Identifier	Risk Title	Responsible Lead	Probability of Occurrence (0.1 - 0.9)	Severity of Consequence (0.1 - 0.9)	Description of Risk	Impact of Risk	Mitigation Activities	Planned Start	Planned Complete
RSE5B01	Transition process at DAAC	Jim Mather, John Ujhazy	LOW	MEDIUM	Develop an upgrade transition plan that is repeatable, that can be tailored to each DAAC and is acceptable to each DAAC.	DAAC specific			
RSE5B02	Downtime at DAAC	Jim Mather	HIGH	MEDIUM	Determine the amount of down time at the DAACs.	DAAC specific	Review the transition plan.	Feb-00	Mar-00
RSE5B03	Recovery contingency at DAAC	Jim Mather		HIGH			Extensive transition testing		
RSE5B04	Not enough floor space, A/C, power, ports, cable length for additional hardware	Jim Mather	LOW	MEDIUM	There may not be enough floor space, A/C, power ports etc to support additional hardware at DAACs.	DAAC specific			
RMQ5B01	No enough system admin staff to perform timely DAAC upgrades	Pam Johnson		MEDIUM			Recruit more system admins		
RSD5B01	Rogue Wave upgrade: technical and schedule risk	Howard Ausden	MEDIUM	HIGH	The impact of upgrading RW is widespread and there are many changes. Significant development effort could be required. This could delay program milestones	Development specific	Identify a lab mode and a lead to coordinate all subsystems to regression test with new RW.	11/15/1999	01/07/2000
RSD5B02	Sybase server upgrade not planned, may need new HW and licenses	Maureen Muganda	LOW	MEDIUM	There is no documented plan to upgrade Sybase server to ASE 11.5.1. Need to understand how new and old are supported in lab, VATC, PVC, and DAACs, and how the DAACs will transition to the new server.	Project Wide	Document the Sybase ASE 11.5.1 upgrade plan, to include lab, VATC, and DAACs. Identify HW and license resources to be used.	11/17/1999	12/15/1999
RSD5B03	System cannot be safely and quickly shutdown.	Howard Ausden	HIGH	MEDIUM	Quiescing the system post AM-1 launch will take hours. Data and requests could be lost.	DAAC specific	Cost the development of graceful shutdown and warmstart capabilities.	11/15/1999	01/07/2000
RSD5B04	Custom code interoperability.	Evelyn Nakamura		High			Extensive testing in development labs		
RSD5B05	COTS upgrade may introduce technical problems	Evelyn Nakamura		High			Delay deployment of the troublesome products		
RSE5B05	Not enough HW and SW licenses to support transition plan at EDF or the DAACs	Jim Mather	LOW	MEDIUM	There may not be enough HW and SW licenses to support transition plan at EDF or the DAACs.	Project Wide	Sufficient HW at DAACs, EDF, and SW licenses		
RSE5B06	Support for IRIX 6.2 ends June 2000	Ravi Nirgudkar	LOW	LOW	SGI has confirmed that IRIX 6.2 will be retired on 7/1/2000. ECS system will have multiple SGI machines in various labs and in DAACs on unsupported OS.	Project Wide. However, we haven't experienced any problems with IRIX 6.2 so the impact is expected to be minimal	Check with SGI for all the OS upgrade related issues. Check with SGI customers who have recently done a similar upgrade. Minimize the exposure window		