

335-CD-004-001

## **EOSDIS Core System Project**

# **ECS COTS Deployment Plan Volume 4**

January 2001

Raytheon Company  
Upper Marlboro, Maryland

# ECS COTS Deployment Plan Volume 4

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# Preface

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This document is a formal contract deliverable with an approval code 2. As such, it does not require formal Government approval, however, the Government reserves a time-limited right of disapproval (45 days) for the initial submittal. Once this document is approved, Contractor approved changes 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

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This is the fourth 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). This document provides information regarding products that are being upgraded or added, rationale for the upgrade, schedule for upgrade, and the process used to report weekly status. The document also provides information about the reviews and risk mitigation activities performed throughout the upgrade cycle.

**Keywords:** product, schedule, status, test, COTS

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### **Appendix A. CUT (COTS Upgrade Team) Status Table**

### **Appendix B. COTS Compatibility Matrix**

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# 1. Introduction

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## 1.1 Identification

This document is the ECS COTS Deployment Plan for COTS products being upgraded for the period defined for Volume 4 of this document for the ECS project which is defined by Data Item Descriptions (Ids) 335/DV1.

## 1.2 Scope

The “ECS COTS Deployment Plan, Volume 4” documents the ECS approach and currently identified plans for upgrading the various COTS packages described in section 4 and section 5 of this document. Volume 4 includes upgrades that occur during the period January 1, 2001 through June 30, 2001. 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 time period. The next volume will be Volume 5 and its coverage will begin in July 2001.

## 1.3 Purpose

The purpose of this plan is to provide the approach and currently available details related to the upgrading of the COTS products identified for Volume 4. This plan describes the process for identifying, developing, integrating, testing, and shipping all Volume 4 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 4 of this document will be formally delivered in January 2000. Status on the COTS software upgrades identified in this document will be reported on a weekly basis through the COTS Upgrade Team (CUT) Matrix (Refer to Appendix A for recent CUT Matrix) and Hardware migration weekly updates/discussions with appropriate DAAC personnel.

It is essential to understand that as the identification of requirements and risks progresses, some elements of this document may change, e.g. additional products may be identified for upgrade during the period specified herein for Volume 4.

## 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 may be used to supplement and provide additional cross-reference information than that contained in this document.

Section 3 provides an overview and introduction of the requirements driving COTS upgrades, such as custom code integration, vendor support policies, or COTS product interdependencies. A brief discussion of the initiatives in the Raytheon 6Sigma (R6σ) COTS Software Upgrade Improvement Process is also presented. This section provides a summary table of all currently identified COTS upgrades for the Volume 4 period, that are discussed in more detail in sections 4 and 5.

Section 4 provides a detailed description of the COTS software upgrades that are planned for January 01, 2001 through June 30, 2001. This section may reference the terms and concepts outlined in section 3 to describe the rationale for the upgrade or other change, and provide details related to the upgrade or change that may be useful to the DAAC for long term planning.

Section 5 provides a detailed description of the COTS hardware/network upgrades that are planned for January 2001 through June 2001. This section references the terms and concepts outlined in section 3 to describe the rationale for the upgrade or other change, and provide details related to the upgrade or change that may be useful to the DAAC for long term planning.

## 2. Related Documentation

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### 2.1 Parent Documents

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

334-CD-600	6A Science System Release Plan for ECS
334-CD-610	6B Science System Release Plan for ECS
335-CD-001	ECS COTS Deployment Plan, Volume 1
335-CD-002	ECS COTS Deployment Plan, Volume 2
335-CD-003	ECS COTS Deployment Plan, Volume 3
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 4 Upgrades or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

409-CD-600	ECS Science Acceptance Test Plan for Release 6A
412-CD-510	ECS Science Acceptance Test Report for 5B
170-WP-024	ESD 95 Archive Study for the ECS Project (Project Sensitive – Not to be reproduced or disclosed)
CM-1-005	ECS Project Instruction for Turnover and Installation of COTS, OTS, Library Software and Configuration Files
SE-1-025	ECS Project Instruction for the COTS Software Upgrade Process
TT-1-001	ECS Project Instruction for Test Preparation, Execution, and Documentation
No Number	ECS Acceptance Test Procedures for Release 6A

## **2.3 Information Documents**

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

101-CD-001                      Project Management Plan for the ECS Project

## 3. COTS Upgrade Overview

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### 3.1 COTS Upgrade Process Overview

Volume 4 of DID 335 provides information on upgrades that are scheduled or tentatively planned to be initiated during the period from 01/01/2001 through 06/30/2001. The COTS upgrade information detail that is available at the time of release of this volume is included in the following sections, section 4, COTS Software Upgrades and section 5, COTS Hardware Upgrades. Additional information and updates are also provided throughout the COTS upgrade process including:

- Weekly update and distribution of COTS Upgrade Team (CUT) Matrix (Refer to Appendix A for recent CUT Matrix).
- Hardware Migration Plans.
- Weekly discussions with DAACs on hardware issues.
- COTS PSRs

### 3.2 Overview of COTS Upgrade Requirements/Considerations

This section summarizes the process by which upgrades to ECS COTS products are identified. The identified COTS products are upgraded and deployed the 5B and 6A System Release time frame.

### 3.3 Mitigating Risk in Identifying Upgrades

Various factors are included in identifying COTS products for upgrades, replacements or additions. ECS works to mitigate risks in multiple ways. Defects against a COTS product are identified and tracked in a similar manner to defects with custom code. COTS products also have additional potential risks that need to be considered in reducing scheduling and operational impacts that are inherent to COTS products. The efforts ECS makes to mitigate both types of risk is discussed in the following sections.

#### 3.3.1 Identification of Defect/NCR

An NCR can be identified against a COTS product as well as against custom code. This process is discussed in ECS Project Instruction SD-1-014 and ECS Work Instruction MO-1-003-5. In many cases, risks related to the COTS product can be mitigated by custom code or configuration changes. There are occasions where risks identified in the NCR process are best mitigated by an upgrade of a COTS product. In some cases, patches are provided by the vendor that will sufficiently mitigate the risk. Other cases, the risk is best mitigated by a versioned upgrade of the COTS product. After the upgrade is identified as the resolution to an NCR, a patch or

version upgrade is scheduled as soon as possible. In cases where the NCR is high impact, the COTS product upgrade may be “fast tracked” through the COTS Upgrade Process.

To mitigate risks that have been identified in the COTS vendor’s non-conformance process, patch bundles with fixes to identified problems are taken through the COTS Upgrade Process. Although these patch bundles may have fixes to problems that have not yet occurred in the ECS project, these bundles may also include “fixes” to items that have potential risk to occur within the ECS project environment. Unless a specific problem and a specific patch is identified to resolve an NCR, these patches are bundled for an upgrade to specific COTS products on a periodic basis. These patch bundle upgrades are usually limited to COTS with substantial impact such as operating systems and databases.

### **3.3.2 Vendor Support**

Although some terms and concepts differ, support for the full life cycle has been implemented for both COTS Software and Hardware products in the ECS Project. A significant part of this concept is maintenance support for these COTS products. The process for renewing and funding software maintenance agreements is discussed in ECS Project Instruction IL-1-006. The discussion of “support” in this document refers to the technical support provided by the vendor under the ECS maintenance contract with the vendor and not the payment for the maintenance support.

#### **3.3.2.1 COTS Software Support**

Software support agreements for most COTS vendors include consultation, problem assistance, patches and upgrades. In any COTS product life cycle, there are points at which a product may be “supported” at a different level. This is usually identified by the COTS product reaching one of the following milestones in the COTS product lifecycle:

- Specific version is identified by the vendor to have reached end-of-life.
- Specific version is identified by the vendor to have reached end of support.
- Product is merged/evolved to another product or is made obsolete.

Many large vendors have formulated very specific policies on these milestones and when they occur. Some of these are published on the vendor’s web site. Others will provide the criteria for these milestones, upon request. Other vendors have not defined a policy as would be preferred, but generally these are not COTS products with major impact for ECS.

Reaching any of these milestones has the potential to cause some level of risk to the project. To mitigate these risks, these milestones are tracked in the COTS Compatibility Matrix<sup>1</sup> and are updated on a quarterly basis. An overview of each of these milestones and their potential impact

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<sup>1</sup> An example of some of the compatibility information maintained in the COTS Compatibility Database is provided in Appendix B. The example provides information on COTS product versioning and Sybase dependencies that would support analysis relating to a Solaris Upgrade.

is provided in the following sections to serve as a reference for the upgrade discussions in sections 4 and 5. These milestones in a COTS software product are considered by the CUT team when identifying the upgrades for each rolling wave period.

### **3.3.2.2 COTS Software Product End-of-Life: Best Effort Support**

COTS products are under active support for a period after release. The end-of-life policy among vendors differs considerably. The most common practice is to support a certain number of versions back. The larger vendors with this type of support policy often support the most current version and the last two versions back. Some vendors support only one version back from the most current version while others actively support only the most current version.

It is important to note that when a COTS product reaches end-of-life, and the product is “supported” by the vendor, but at a lower level than the products/versions the individual vendor considers “current”. While there is some level of support for the end-of-life version, there are typically no bug fixes or new code written for the end-of-life versions if the “problem” has been fixed in a more recent version.

This lower level of support is often called “best effort”: e.g., the vendor will make the best effort to address the problem without writing new code. If the problem that needs to be fixed has already been fixed in a later version, the “support” the vendor provides is to recommend an upgrade to the more “current” version. The longer the COTS product is at end-of-life, the more likely that an upgrade will be recommended to fix the identified problem.

Some levels of end-of-life risk can be tolerated and in the case of COTS vendors that have a very rapid end-of-life cycle, some risk may be prudently tolerated. The CUT team reviews the risk and the possible impacts when identifying the COTS upgrades for each rolling wave and mitigates the highest levels of risk possible with the COTS selected for upgrade.

### **3.3.2.3 COTS Software Product End-of-Support**

Many COTS vendors identify an end-of-support Date for versions of their COTS products. In some cases, such as the major operating system vendors, this occurs  $x$  number of years after the end-of-life date. Other COTS vendors, such as Sybase give notice, usually a year in advance, of when end-of-support will occur with a product version. In this case, there is no end-of-life phase, as the product will be actively supported until it is support formally ends.

There are some vendors who do not have a defined end-of-support date, but the ability to obtain active support for resolution of problems with older versions decreases over time. There is greater risk that there will be timely and effective resolution of problems that require “bug” fixes. The risk generally increases over time.

### **3.3.2.4 COTS Software Product Evolution or Obsolescence**

There can be product consolidations and/or selling specific products that not longer adhere to a vendor’s product line. There have been a number of mergers among COTS product vendors in recent years that have also led to COTS software evolution or obsolescence.

COTS Products are tracked to identify and mitigates risks that may be associated with any of the following:

- No new development done for a specific COTS product.
- Stand-alone product merged with other products and will no longer available as a separate product.
- Product sold to a new vendor.

Some COTS products may have end-of-support risks associated not with a specific version, but with dependencies on other versions/models of COTS products, that are a variation on end-of-support dates for the primary COTS product. These risks are associated with cross product software compatibility and are discussed in more detail in the following section.

### **3.3.3 Cross Product Software Compatibility**

In addition to the risks that may be associated with end-of-life and end-of-support dates for specific COTS products, risks associated with cross-product dependencies and compatibility are tracked to identify risk and risk mitigation steps. Specific cross-compatibility issues that are tracked include those discussed in the following sections. When upgrades are identified for any COTS product, a cross-product versioning support compatibility analysis is performed to identify any risks to the upgrade. The CUT team provides input on methods that may be considered to mitigate the identified risks. A consensus is reached on the most efficient method of mitigating the risk, balancing risk levels and available resources. The primary cross product compatibilities are discussed in the following sections and include:

- Operating System Version Compatibility
- Database Version Compatibility
- Compiler Version Compatibility
- Other COTS Product Compatibility
- Hardware/Software Product Compatibility

#### **3.3.3.1 Operating System Version Compatibility**

All COTS software is dependent on Operating System (OS) versioning compatibility. COTS vendors identify the operating system versions that specific COTS product versions will support. In general, COTS vendors support the versions actively supported by the OS vendor and drop support for OS versions which have reached end-of-life or are near to end-of-life. Adding new OS versions and dropping end-of-life OS versions for a specific COTS product usually occur in a six month to eighteen month cycle, depending on the timing of the release of the new COTS product version.

On occasion, a COTS vendor will announce that no new development/versions is planned for one or more of the operating system platforms that are utilized for the COTS product. The CUT team identifies these risks and works to mitigate these risks in some of the following ways:

- Discussion with the vendor of the impacted COTS product.
- Discussion with the Operating System Vendor on the withdrawal of support for a specific OS.
- Identification of possible alternative operating system hosting.
- Identification of alternative COTS/Freeware product implementation.

The COTS Hardware/Software compatibilities are discussed in section 3.3.3.5.

### **3.3.3.2 Database Version Dependencies**

A number of COTS Products in ECS are dependent on a Sybase Database version. It is typical that although Sybase may actively support several Sybase ASE and OpenClient versions at the same time, the COTS product may have certified only one or perhaps two Sybase/OpenClient versions. In some cases, the vendor has not formally certified a specific Sybase version, but the vendor will support resolving problems with some other versions and/or report that customers are using a version and report no problems. On occasion, there are identifiable incompatibilities between a COTS product version and a Sybase database version. The CUT team identifies these potential risks and works to mitigate these risks, these may include:

- Identification of the actual level of risk (vendor information/EDF testing, etc.)
- Identification of COTS product upgrade that is certified or capable of supporting compatibility with the identified baselined (or to be baselined) version.
- Identification of alternative implementation (i.e., different operating system, script, etc.)

### **3.3.3.3 Compiler version compatibility**

Some COTS products are certified with a compiler version for a specific OS. The level of support will be most complete if the certified compiler version is in use. Generally, only a single compiler version is certified for a specific OS version. The CUT team reviews upgrades to mitigate any identified risks associated with compiler version dependencies.

### **3.3.3.4 Other Compatibility Issues**

The CUT team also identifies other potential risk factors associated with COTS products, including the following:

- Compatibility between related COTS products versions, i.e., RogueWave DBTools, Tools and ToolsPro products require compatible versions between the 3 libraries and also require compatible versions (same versions) across all OS platforms.
- Some COTS products have some dependencies on Motif versions and/or HDF versions.

### **3.3.3.5 Hardware/Software Compatibility**

Hardware/Software Compatibility issues are identified and reviewed for risk and risk mitigation, including the following:

- Support for all planned and existing hardware devices will be available at the time of hardware upgrades.
- Hardware firmware is currently supported.

### **3.3.4 Features/Performance Upgrades**

Some COTS upgrades are identified to address performance and/or new features benefits. Functional and Performance requirements (F&PRS) are not provided for the upgrades discussed in this document, except when there is a change or impact to the current requirements met by the COTS products.

#### **3.3.4.1 Performance**

If performance risks are identified, the CUT team will work to identify the necessary COTS upgrades/replacements to address the performance issues.

#### **3.3.4.2 Features**

If specific new features are required by ECS Development Organization or operational sites for a COTS product and/or the project, the CUT team will review the requirements and identify a COTS upgrade to provide the required features.

#### **3.3.4.3 Hardware Support**

As part of the COTS Life Cycle Implementation, ECS has hardware maintenance for hardware products deployed to the DAACs. Firmware maintenance is included with hardware maintenance support. Hardware maintenance for failed components is handled by individual Maintenance Work Orders (MWO).

Hardware and firmware products can reach end-of-life and/or end-of-support, just as software products may reach this stage. Replacement or upgrade support for hardware components as a class or individually is not covered by standard industry hardware maintenance contracts. Hardware replacements and upgrades generally require procurement of new or additional components.

Risk for some hardware components that have reached end-of-life can be or are mitigated by availability a pool of hardware components in case replacement is necessary prior to a planned hardware upgrade.

In some cases, a hardware vendor may identify that equipment will no longer be supported after a certain date. In cases where there are other hardware, software and/or firmware dependencies that cause risks for the ECS Project, a migration or replacement to supported hardware devices are require to mitigate risks.

### 3.4 Conservation of ECS Resources

In considering COTS upgrades (HW and Software) CUT team participants and other ECS personnel identify activities which offer potential to conserve ECS Resources, including the following:

- Reduction of development activities
- Reduction of COTS upgrade support activities, which may in turn enable reduction of associated PSR support, installation support and testing support for COTS upgrades.
- Reduction of software maintenance costs
- Reduction of hardware maintenance costs.

Activities that are considered to have potential to conserve ECS Resources are evaluated and implemented when it is identified that these actions will result in minimal risk to the project.

In support of conservation of ECS resources, the goal is to:

*Simply the ECS system, retire the obsolete COTS software and hardware, decrease the number of software licenses to reduce the operational cost.*

### 3.5 R6 $\sigma$ (Sigma) COTS Software Upgrade Process Improvement

A Raytheon 6 $\sigma$  (Sigma) COTS Software Upgrade Process Improvement project is working on improving the efficiency and effectiveness of the current COTS software upgrade process. The following activities are targeted with this goal in mind.

- Make the updates to Baseline process efficient.
- Develop a case to have a single COTS software POC for all non-ICOTS products in Development.
- Monitor the improvement in the CCR process, performed by another group, and its impact to the COTS software upgrade process.
- Develop an efficient way to develop Install Instructions.
- Plan PSR process training for all personnel working on COTS software upgrade.
- Evaluate the structure of Internal walkthrough.
- Develop a case to have the COTS software POC in each department authority to enter the Primavera schedule for COTS software upgrade activities.
- Identify and document the impact to the system due to a certain COTS software upgrade.
- Identify and document dependency of the custom code on a COTS software upgrade.
- Develop a process for streamlining the testing of COTS software products in the Functionality Lab.

- Develop a process for streamlining the testing of COTS software products in VATC.
- Update the COTS software upgrade process PI and WI.
- Identify and implement changes in the PSR document.
- Identify and implement changes in DID 335.

### **3.6 COTS Upgrade Summary**

Details of the COTS Software Upgrades/Migrations are provided in section 4, COTS Software Upgrades. Details of the COTS Hardware Upgrades are provided in section 5, COTS Hardware Upgrades. Table 3-1 provides a summary of the planned COTS Hardware and Software Upgrades and identifies any dependencies in these upgrades. Estimated completion schedules are also provided.

**Table 3-1. COTS Hardware/Software Upgrades Summary (1 of 2)**

COTS Product	Baseline Version	Upgrade Version	Dependencies	Criticality for Operational Support	Targeted Completion
SGI O2K/3800 Installation at LaRC for DRG	N/A	N/A	Installation of Origin 3800 and Origin 2000/400Mhz. CPU at LaRC	Medium	01/2001
GSFC SPR upgrade	n/a	add CPUs & new O2K 3800	No COTS/Custom code dependencies or installation sequence requirements.	Medium	01/2001 (CPUs) FY 2002 (3800)
AMASS	4.12.4	5.0	As identified in the AMASS PSR and ESD 95 White Paper	High	03/2001 (est.)
ACSLs	5.3	5.3.2	As identified in the AMASS PSR and ESD 95 White Paper	High	03/2001 (est.)
DBVision	3.1.8	3.1.8	HP removal dependent on DBVision migration to Solaris.	Low	03/2001
DCE Cell Manager	1.6.2	1.6.2	HP removal dependent on DCE Cell Manager migration to Solaris.	Low	03/2001
Remedy	3.2.1	3.2.1	HP removal dependent on Remedy migration to Solaris.	Medium	03/2001
Firewall Implementation	N/A	TBD	There are hardware dependencies for the firewall implementation. No identified COTS/Custom code software dependencies or installation sequence requirements.	High	Dependent on approval on 1/03/2001 & receipt of hardware by 2/21/2001 SMC: Late April 2001 GSFC: Late May 2001 NSIDC: Late June 2001 EDC: Late July 2001 LaRC: Late Aug. 2001
PDS	N/A	GOTS Implementation	Dependencies identified and addressed within GOTS system	High	05/2001 (est.)
Open View	6.00	6.1	HP removal dependent on OpenView migration to Solaris.	Low	05/2001

**Table 3-1. COTS Hardware/Software Upgrades Summary (2 of 2)**

COTS Product	Baseline Version	Upgrade Version	Dependencies	Criticality for Operational Support	Targeted Completion
Tivoli Server	3.6	Enterprise Console/Framework only to 3.6.3	Upgrade required prior to Sybase ASE 11.9.2 upgrade/HP removal dependent on Tivoli Server migration to Solaris.	Low	05/2001
Autosys	3.4.2	3.5	Upgrade required prior to Sybase 11.9.2 upgrade. Upgrade compatible with Sybase 11.5.1 and 11.9.2.	High	07/2001 (est.)
HP Migration	HP-UX 10.20	Solaris 2.5.1	HPs will be removed after successful migration of all HP COTS to Solaris and current custom code to Solaris.	Low	07/2001
Purify	4.5.1	5.3 on Sun & SGI	No COTS/Custom code dependencies or installation sequence requirements.	Low	07/2001
AIRS	n/a	AIRS processing	As identified in the ESD 95/D3 replacement Transition Plan.	Medium	08/2001 (est.)
Sybase ASE & Sybase SQL Server Monitor	11.5.1	11.9.2.3 for Sun & 11.9.3.x for SGI	Upgrades to Autosys 3.5/Tivoli Enterprise Server Enterprise Console/Framework 3.6.3 must occur prior to Sybase ASE 11.9.2 upgrade	High	09/2001
ESD 95 – D3 Drive Replacement	D3 drives	9940 drives	As identified in the ESD 95 White Paper	High	12/2001 (to be completed in phases at each DAAC)
Tripwire on Sun	1.2	1.3	No COTS/Custom code dependencies or installation sequence requirements.	Low	TBD – may be replaced by other COTS
Solaris Development Tool Upgrades	2.5.1	8	N/A – No delivery planned for DAACs during period of either COTS or Custom Code related to this initiative from 01/01/2001 to 06/30/2001.	N/A at DAACs in this period	N/A at DAACs in this period

## 4. COTS Software Upgrades

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The following COTS software products are planned for upgrade, removal or addition. This section identifies the COTS software products that will be upgraded and the rationale used to justify this upgrade. As part of the COTS Upgrade Planning Cycle, the following COTS products are planned to be upgraded, migrated to alternative OS platform and/or removed from the ECS baseline.

### 4.1 Sybase ASE 11.9.2/11.9.3 and Sybase SQL Server Monitor Upgrade

#### 4.1.1 Description of COTS

Sybase Adaptive Server Enterprise is a multi-user relational database management system (RDBMS) which:

- provides management services
- provides control of, and information about a relational database for concurrent users
- passes information from client to server and vice versa across the network using Open Client as the standard Application Programming Interface (API)
- provides asynchronous prefetch, auditing and dbcc enhancements, point in time recovery and extended stored procedures.

#### 4.1.2 Rationale for Upgrade

The primary rationale for upgrading Sybase ASE and Sybase SQL Server Monitor is Sybase vendor support. Support for this COTS product is considered critical to effective COTS software risk management because the product is used in several subsystems and problems with effective functioning of the product could cause potentially severe impacts to overall ECS system functions.

##### 4.1.2.1 Vendor Support

Sybase software maintenance support policy is to identify end-of-support dates for specific product versions on some or all hardware/operating system platforms.

On October 12, 2000, Sybase extended their originally announced end-of-support dates for 11.9.x series. Sybase ASE 11.9.2 on Solaris end-of-support date is 03/15/2002. Sybase ASE 11.9.3<sup>2</sup> for IRIX end-of-support date is 12/31/2001.

All Sybase ASE versions beyond 11.9.2 (including 11.9.3, 12.0 and 12.5) require the most recent operating systems versions. This was and is an issue with Sun machines because although Sybase 12.0 is available for Solaris, this version is not supported on Solaris 2.5.1, the current Sun OS in ECS. Therefore an upgrade to Sybase ASE 12.0 is not currently an option.

There is a long term plan to upgrade to the Sybase ASE 12.x series when the versions are Generally Available (GA) and the supported operating system platforms are available within ECS. There are no identified end-of-support dates for any Sybase ASE 12.x series versions.

#### **4.1.2.2 NCR**

No NCRs are associated with this upgrade.

#### **4.1.2.3 Features/Performance Upgrades**

Upgrades are planned primarily for vendor support, although the row-locking feature provided in this version is expected to provide some performance gains.

#### **4.1.2.4 Cross Software Product Compatibility**

Analysis has been performed to verify that Sybase ASE 11.9.2 and ASE 11.9.3 are compatible or will be compatible with all COTS products at the time of upgrade. This analysis is provided in Table 4-1 below.

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<sup>2</sup> Sybase 11.9.2 is a 32-bit version. No 32-bit version for SGI was provided in the 11.9.x series. Only a 64-bit, 11.9.3 version was provided for IRIX.

**Table 4-1. COTS with Sybase ASE 11.9.2/11.9.3 Dependencies**

COTS Product	Deployed as Status	COTS Baseline Product Version	Sybase ASE Compatibility
Autosys Server	OPS	3.4.2	Known incompatibility of Autosys 3.4.2 with Sybase ASE 11.9.2. Version 3.4.2 is at end-of-life and will be upgraded to version 3.5, which supports Sybase ASE 11.5.1, 11.9.2 and 12.0.
DB Vision	OPS	3.1.8	Support Sybase ASE 11.0 through 11.9.2.
DBTools.h++/CT.lib	DEV	3.1.4	Support OpenClient 11.1.1 (OpenClient is interface, not ASE version) – used on Sun only
HP-UX	OPS	10.2	Support ASE 11.0.3.3/11.5.1/11.9.2 is supported
IQ Report Writer	OPS	5.5.01	Not certified for 11.9.2, but vendor will support although upgrade may be necessary to resolve an identified problem. Tested satisfactorily in the EDF. No certified version for Sybase 11.9.2 is currently available.
IRIX	OPS	6.5.6m	Support ASE 11.5.1; 11.9.3; 12.5/OC 12
Remedy ARS Server	OPS	3.2.1	Support ASE 11.5 (11.5.1/11.9.2 not officially certified, but vendor reports that no known problems with use w/existing customers
Solaris	OPS	2.5.1	Supports Sybase ASE 11.5.1 & 11.9.2
SQR (BRIO report)	OPS	4.3.4	Support OpenClient 11.1.1/ASE 11.5.1/11.9.2
SQS (Spatial Query Server)	OPS	3.2.2	Support OpenClient 11.1.1/12; all ASE 11 versions
Sybase Central	OPS	3.0.0	Support all ASE versions through 12.0
Sybase Open Client/C for HP	OPS	11.1.1	Support 11.1.1 compatible with 11.0.3.3 through 12.5
Sybase Open Client/C for SGI	OPS	12.0.0	12.0 compatible with 11.5.1 through 12.5
Sybase Open Client/C for Sun	OPS	11.1.1	11.1.1 compatible with 11.0.3.3 through 12.5
Sybase Replication Server/Manager	OPS	11.5.1	Compatible with ASE 11.0.3.3, 11.5.1, 11.9.2, 12.0, 12.5
Tivoli Server	OPS	3.6	Upgrade of at least Tivoli Framework & Enterprise Console to 3.6.3 to support 11.9.2 & 11.5.1 planned.

#### 4.1.2.5 Hardware Product Compatibility

No hardware product compatibility issues have been identified.

### **4.1.3 Operational Impacts**

There are no dependencies on any transitions for this COTS upgrade.

### **4.1.4 Custom Code Impact**

This analysis is included in Table 4-1 above as applied to COTS used and delivered with the custom code. Refer to products with “Deployed as Status” of DEV in this table.

### **4.1.5 Licensing Impact**

Product does not currently require license key installation or administration.

### **4.1.6 External Drivers**

No external drivers have been identified.

### **4.1.7 Other Impacts/Comments**

No other impacts have been identified for this COTS product.

### **4.1.8 COTS Installation Sequence/Dependencies**

As noted in Table 4-1, some upgrades will be needed for compatibility with the Sybase ASE 11.9.2/11.9.3 upgrade. The two dependencies for Sybase ASE upgrade are that the following upgrades need to occur prior to the Sybase ASE upgrade. These dependencies are being planned to occur prior to the Sybase ASE 11.9.2 upgrade.

- Tivoli Server (Enterprise Console and Framework components) are required to be upgraded to version 3.6.3 prior to Sybase ASE 11.9.2 upgrade. Refer to section 4.6, Tivoli Server TEC/Framework 3.6.3 Upgrade and Tivoli Server HP to Sun Migration for additional information regarding this upgrade.
- Autosys Server also needs an upgrade to version 3.5 for compatibility with the Sybase ASE 11.9.2 upgrade. Refer to section 4.8, Autosys 3.5 Upgrade for additional information regarding this upgrade.

Either the Tivoli or the Autosys upgrade also may occur at any time prior to the Sybase ASE 11.9.2 upgrade, as both upgrades have been confirmed to support both Sybase ASE 11.5.1 and Sybase ASE 11.9.2.

### **4.1.9 Conservation of ECS Resources**

Upgrade is targeting the most recent Generally Available (GA) version for the current baselined Solaris and IRIX operating system versions. Migration to HP-UX will not be planned as HP migration is expected to be completed prior to this upgrade.

## **4.2 DBXcessory HP Migration Removal**

There has been agreement to remove DBXcessory. There will be no level 3 or level 4 F&PRS impact to the removal of this COTS product. Response has been received from all DAACs that this product is not needed at the DAACs. Product is not needed or used by DDM.

### **4.2.1 Description of COTS**

DBXcessory is a visual tool that allows developers to create Motif GUIs. It also, allows developers to use dynamically generated SQL or stored procedures to access data in Sybase. It speeds client/server application development with its WYSIWYG user interface development environment. Some of the key features are:

- Integrated Schema Browser – which allows viewing database structures and contents
- Support Dynamic SQL and stored procedures.
- Full control over database transactions

### **4.2.2 Rationale for Removal**

The DBXcessory product is not currently in active use by the DAACs or ECS DDM Development Organization. ESDIS will be appraised of the removal. Product is recommended for removal to conserve resources needed to maintain and upgrade COTS product.

### **4.2.3 Operational Impacts**

Removal will occur in conjunction with the HP Migration. Refer to section 5.1, HP Removal/Migration to Solaris for additional information on this initiative.

Product will not be migrated from the HP platform to the Sun platform. The software will be removed when the HP hardware is removed during the final stage of the HP Migration. The CCR that will modify the Hardware Maps (ECS Technical Document 920-TDx-001) will also modify ECS Technical Documents 910-TDA-003 (COTS Version Map) and 920-TDx-002 (HW/SW Maps) to complete removal of the DBXcessory product.

### **4.2.4 COTS Installation Sequence/Dependencies**

There are no identified dependencies associated with removal of the COTS product.

### **4.2.5 Conservation of ECS Resources**

In the evaluation of removal of the HP platform from the ECS DAAC environment, it was identified that DBXcessory would require new licenses to be procured to migrate from the HP to Solaris platform. The CUT team requested the DAACs to respond to an inquiry if this COTS product was in use at the DAACs. All DAACs responded that the product was not in use and could be removed. ECS DDM Development group had verified that the product was not needed by development. This product was the only COTS product that required additional expenditure to transfer licenses from a HP platform to a Solaris host.

## **4.3 DBVision HP to Sun Migration**

### **4.3.1 Description of COTS**

DBVision enables DBAs to continuously monitor and manage large, complex RDBMS environment around the clock.

- Provides fully automated performance monitoring
- Personnel can be notified via pager or email if alarm conditions are encountered
- It also captures the real-time and historical information necessary to “rewind” and view what happened before an alarm occurred and drills down to SQL to pinpoint and solve the problem.

### **4.3.2 Rationale for Migration**

The DBVision COTS product will be migrated from the HP platform to the Sun platform as part of the overall HP Migration, which will reduce maintenance and support costs required for a third operating system platform. No version change is required and none is planned.

#### **4.3.2.1 Vendor Support**

There are no vendor support issues identified with this migration that are required to be addressed at this time. Although this COTS product (under the DBVision product name) is not expected to be supported past Sybase ASE 11.9.2, the product (originally a Sybase product) was sold and migrated to a Platinum product. Computer Associates (CA) recently acquired Platinum. CA is migrating the DBVision product to become one of CA’s ManageIT components. The ECS DDM organization plans to evaluate this product in May or June of 2001.

#### **4.3.2.2 NCR**

No NCRs are identified with this migration.

#### **4.3.2.3 Cross Software Product Compatibility**

DBVision is supported on Solaris 2.5.1 and is compatible with both Sybase ASE 11.5.1 and Sybase ASE 11.9.2.

#### **4.3.2.4 Hardware Product Compatibility**

There are no identified hardware product compatibility issues.

### **4.3.3 Operational Impacts**

The migration of this COTS product will occur as part of the HP Migration. Refer to section 5.1, HP Removal/Migration to Solaris for additional information on this initiative. It has been identified that this COTS product will be migrated to the DMS host machine at all sites.

Additional details will be provided on the HP Migration in the HP Migration Transition Plan documentation and weekly CUT Matrix updates (Refer to Appendix A for recent CUT Matrix).

#### **4.3.4 Custom Code Impact**

There are no identified custom code impacts associated with this COTS product.

#### **4.3.5 Licensing Impact**

License keys are required for product. Reference procedure and contacts will be provided with the PSR.

#### **4.3.6 External Drivers**

No external drivers have been identified for the COTS product.

#### **4.3.7 Other Impacts/Comments**

No other impacts have been identified for the COTS product.

#### **4.3.8 COTS Installation Sequence/Dependencies**

There are no identified installation sequences required for this COTS product other than those identified in the PSR documentation. Sybase is the only product dependency and the current baseline version (3.1.8) supports both Sybase ASE 11.5.1 and 11.9.2. Therefore migration can occur before or after the Sybase ASE 11.9.2 upgrade.

#### **4.3.9 Conservation of ECS Resources**

In the analysis of HP COTS Migration to Solaris, it was identified that there would be no additional costs to migrate existing DBVision HP-linked licenses to a Solaris platform. No version upgrades are available without migration to the ManageIT replacement product, which will be evaluated in May or June 2001.

### **4.4 DCE Cell Manager HP to Sun Migration**

#### **4.4.1 Description of COTS**

DASCOM Inc. DCE Cell Manager Management Agent product provides additional capability to the existing DCE Tools and Services. Providing monitoring, administration, and control access to DCE services without requiring detailed knowledge of the internal functions of DCE. With Cell Manager, the administrator is provided a toolset consisting of:

- Security Manager – you can add principal accounts for new users; create groups and control access to registry and CDS objects; set policies; and maintain replicas of registry database.
- Namespace Manager – maintains, manage and monitor the cell namespace.

- Configuration Manager – monitors and manages the cell’s processes and configuration.

#### **4.4.2 Rationale for Migration**

As long as DCE remains integrated with ECS custom code, DCE Cell Manager should remain available to support activities provided by the COTS tool. In addition, a HP-specific tool, the CDS Browser, which has been used as an alternative to DCE Cell Manager, will no longer be available after the removal of HP hosts during the HP Migration Transition. The DCE Cell Manager Management Agent (server) will be migrated to a Sun platform. The CSS Server is currently targeted as the migration host for this COTS product. There will be no impact to the current DCE Cell Manager Host Agent (Client) implementations.

##### **4.4.2.1 Vendor Support**

The product has no identified vendor support issues.

##### **4.4.2.2 NCR**

There are no NCRs associated with this COTS product.

##### **4.4.2.3 Features/Performance Upgrades**

The version and features/performance will not change with migration to Solaris.

##### **4.4.2.4 Cross Software Product Compatibility**

DCE Cell Manager is compatible with the DCE version running on Solaris and HP. The IRIX platform is currently not supported by the DCE Cell Manager vendor for the DCE version running on IRIX 6.5. All DCE Cell Manager Host Agents (clients) on SGI hosts were removed as part of the IRIX 6.5 transition.

##### **4.4.2.5 Hardware Product Compatibility**

No hardware product compatibility issues have been identified.

#### **4.4.3 Operational Impact**

The migration of this COTS product will be included as part of the HP Migration. Refer to section 5.1, HP Removal/Migration to Solaris for additional information on this initiative.

#### **4.4.4 Custom Code Impact**

No custom code impacts have been identified associated with this COTS product.

#### **4.4.5 Licensing Impact**

DCE Cell Manager does not require license key installation.

#### **4.4.6 External Drivers**

No external drivers have been identified in association with the migration of this COTS product.

#### **4.4.7 Other Impacts/Comments**

No other impacts have been identified with migration of the DCE Cell Manager Management Agent to Solaris. DCE Cell Manager would be a useful tool during the DCE replacement by sockets transition.

#### **4.4.8 COTS Installation Sequence/Dependencies**

There are no installation sequence or other dependencies outside of those identified within the PSR for DCE Cell Manager PSR.

#### **4.4.9 Conservation of ECS Resources**

In the analysis of HP COTS Migration to Solaris, it was identified that there would be no additional costs to migrate existing DCE Cell Manager Management Agent HP-linked licenses to a Solaris platform. Although there is a minor version upgrade available to the current baseline 1.62 version, no upgrade is planned because of the following:

- No critical features will be provided with the upgrade.
- DCE is targeted for removal during this calendar year and product will be removed at this point.

### **4.5 OpenView 6.1 Upgrade and HP to Sun Migration**

#### **4.5.1 Description of COTS**

HP OpenView NNM (Network Node Manager) is a COTS network management solution which:

- Monitors the status of networked devices and allows the management of SNMP enabled devices.
- Has been extended in functionality to allow the monitoring of ECS custom applications throughout their life cycle and provides control capabilities for starting and stopping ECS applications.
- Provides the capability to correlate and suppress events that would otherwise trigger a flood of events for connector and device failures, repeated events, and scheduled maintenance.

#### **4.5.2 Rationale for Upgrade**

OpenView will be upgraded to 6.1 (from 6.0) for end-of-life reasons (patch upgrades are scheduled to terminate in the next month or two). This version will also be capable of migration at version 6.1 to Solaris 8, if this initiative is approved. Since a PSR is needed to move the

product to the new migration platform (from HP to Solaris), the upgrade to a minor version should not cause significant additional effort and will mitigate end-of-support risks as well as enable migration to Solaris 8 in the future. Patch support for version 6.0 is scheduled to end in the “next few weeks”. Version 6.2 is in beta currently, but GA release dates are not available from the vendor at this time.

OpenView is currently targeted for migration to the MSS Primary Application Server.

#### **4.5.2.1 Vendor Support**

No vendor support issues have been identified for this COTS product.

#### **4.5.2.2 NCR**

No NCRs have been identified for this COTS product.

#### **4.5.2.3 Features/Performance Upgrades**

No additional features or performance enhancement are expected from this COTS product upgrade.

#### **4.5.2.4 Cross Software Product Compatibility**

There are no COTS software dependencies associated with this COTS product, other than the operating system version. HP OpenView Network Node Manager 6.1 is supported on Solaris 2.5.1, Solaris 7 and Solaris 8.

#### **4.5.2.5 Hardware Product Compatibility**

No hardware product compatibility issues have been identified for this COTS product.

#### **4.5.3 Operational Impact**

This migration will be included as part of the HP Migration. Refer to section 5.1, HP Removal/Migration to Solaris for additional information on this initiative.

#### **4.5.4 Custom Code Impact**

No custom code impacts have been identified associated with this COTS product.

#### **4.5.5 Licensing Impact**

Licensing keys are required for this COTS product. License key procedures and contacts will be included in the PSR.

#### **4.5.6 External Drivers**

No external drivers have been identified in association with the upgrade and migration of this COTS product.

#### **4.5.7 Other Impacts/Comments**

No other impacts have been identified with upgrade and migration of the OpenView Network Node Manager to Solaris. CUT team is currently working with DAACs, ECS Architect's Office and ESDIS to possibly remove this product from the baseline. However, until that decision is made, the CUT team is required to upgrade the product.

#### **4.5.8 COTS Installation Sequence/Dependencies**

There are no installation sequences or other dependencies outside of those identified within the PSR.

### **4.6 Tivoli Server TEC/Framework 3.6.3 Upgrade and Tivoli Server HP to Sun Migration**

#### **4.6.1 Description of COTS**

Tivoli is a COTS enterprise management framework application which:

- Monitors the status of networked devices, hosts and processes that run on the hosts.
- Provides a central console for monitoring the enterprise
- Provides an extensible framework to customize as needed.

#### **4.6.2 Rationale for Upgrade**

Tivoli will need an upgrade of at least the Enterprise Console and Framework (currently baselined as Enterprise Management) to 3.6.3 in order to support Sybase ASE 11.9.2, which will occur shortly after or during the HP migration. Version 3.6.3 also supports Sybase 11.5.1.

The Tivoli Client installation on all operating systems (Solaris/IRIX/HP-UX) will not require any update associated with the migration from HP to Solaris. The vendor has verified that 3.6 clients (current Tivoli client baseline) and other 3.6 server modules will be compatible with the 3.6.3 upgrade of the Tivoli Enterprise Console and Framework server modules.

An upgrade to the most current Tivoli version cannot be supported on Solaris 2.5.1, as Tivoli has dropped support for Solaris 2.5.1 in the most current GA version (3.7). The current 3.6.x versions are currently still under active support by the vendor.

Tivoli Server implementation is currently targeted for migration to the MSS Primary Application Server.

#### **4.6.2.1 Vendor Support**

There are no vendor support issues associated with this migration and upgrade.

#### **4.6.2.2 NCR**

There are no NCRs identified against this COTS product.

#### **4.6.2.3 Features/Performance Upgrades**

No additional features or improved performance are expected with this upgrade/migration.

#### **4.6.2.4 Cross Software Product Compatibility**

Support for the planned upgrade to Sybase 11.9.2 was identified as a compatibility issue if an upgrade to the two Tivoli server components was not made. Enterprise Console and Framework (Enterprise Management Platform) will be upgraded, so that the implementation will be compatible with both Sybase ASE 11.5.1 and Sybase ASE 11.9.2.

#### **4.6.2.5 Hardware Product Compatibility**

No hardware product compatibility issues have been identified associated with this migration/upgrade.

#### **4.6.3 Operational Impact**

Upgrade will be included with the HP Migration. Refer to section 5.1, HP Removal/Migration to Solaris for additional information on this initiative.

#### **4.6.4 Custom Code Impact**

Although no custom code is delivered for Tivoli via custom code releases, there are scripts and configuration data that will be migrated to Solaris and delivered with the PSR tar file.

#### **4.6.5 Licensing Impact**

COTS product requires license keys. The license key procedures and contacts will be included in the PSR document.

#### **4.6.6 External Drivers**

No external drivers have been identified as associated with this COTS product.

#### **4.6.7 Other Impacts/Comments**

No additional impacts have been identified as associated with this COTS product.

#### **4.6.8 COTS Installation Sequence/Dependencies**

The upgrade of the two Tivoli Server modules (Enterprise Console and Framework) to version 3.6.3 must take place **PRIOR** to the upgrade of Sybase ASE 11.9.2 on the Solaris platform.

#### **4.6.9 Conservation of ECS Resources**

In the analysis of HP COTS Migration to Solaris, it was identified that there would be no additional costs to migrate existing Tivoli Server HP-linked licenses to a Solaris platform. Upgrade to most current GA version is not supported on Solaris 2.5.1. Upgrade of all Tivoli Server components to a minor version, i.e., 3.6.3, would provide only minimal benefit.

### **4.7 Remedy ARS HP to Sun Migration**

#### **4.7.1 Description of COTS**

The Remedy Action Request System (ARS) is a trouble ticket management COTS application which:

- provides the capability to electronically compose, submit, store, maintain, and report the status of ECS trouble tickets
- has a web interface which facilitates access to and submission of trouble ticket information directly from a web browser
- allows operations personnel to forward trouble tickets from one DAAC to another
- allows operations personnel to forward a copy of a closed trouble ticket to the SMC for trending analysis purposes
- generates reports and statistics
- interfaces with user's and operator's e-mail to provide automatic notification.

#### **4.7.2 Rationale for Upgrade**

Remedy ARS will be migrated from the HP platform to the Solaris platform. No upgrade is planned at this time. Remedy ARS is currently targeted for migration to the MSS Primary Application Server.

##### **4.7.2.1 Vendor Support**

Remedy Corp. has estimated that version 3.2.1 will reach end-of-life in eight to ten months, as of 11/2000. It is expected that the M&O Remedy/DDTS initiative will upgrade the Remedy version to 4.5.1 before or shortly after this end-of-life date is reached. There is a version available for upgrade on Solaris 2.5.1, version 4.03, which is the last Remedy ARS version that is supported on Solaris 2.5.1. Reviewing this option, it was agreed by the CUT team that this upgrade would only provide relatively short-term end-of-life risk mitigation and required new configurations (e.g., an NT server for Remedy Admin Tools) to be addressed. The CUT team agreed that resources would be more efficiently utilized if Remedy was migrated without upgrade, with the understanding that the M&O Remedy/DDTS initiative is targeting a more current Remedy upgrade within the end-of-life estimates for the current version.

#### **4.7.2.2 NCR**

No NCRs are identified in association with this COTS product.

#### **4.7.2.3 Features/Performance Upgrades**

No performance enhancements or additional features are expected with this migration.

#### **4.7.2.4 Cross Software Product Compatibility**

Sybase ASE is a dependent COTS product for Remedy ARS. Remedy ARS 3.2.1 has certified Sybase 11.5. However the vendor has confirmed that Sybase ASE 11.5.1 and Sybase ASE 11.9.2 are in use by customers and no problems have been reported. The vendor will support use of Sybase ASE 11.9.2 with this Remedy version. The product has no other COTS product dependencies.

#### **4.7.2.5 Hardware Product Compatibility**

There are no hardware product compatibility issues with this COTS product. Remedy ARS is fully supported on the Solaris Operating System.

#### **4.7.3 Operational Impact**

The Remedy ARS COTS migration is associated with the HP Migration. Refer to section 5.1, HP Removal/Migration to Solaris for additional information on this initiative. The migration issues associated with this individual COTS product will be addressed in the Remedy ARS Migration PSR.

#### **4.7.4 Custom Code Impact**

There is a small amount of custom code associated with this COTS product. Migration of this custom code will be included in the Remedy ARS PSR.

#### **4.7.5 Licensing Impact**

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

#### **4.7.6 External Drivers**

No external drivers have been identified for this COTS product.

#### **4.7.7 Other Impacts/Comments**

No other impacts have been identified for this COTS product.

#### **4.7.8 COTS Installation Sequence/Dependencies**

Installation of or accessibility to a Sybase database is required. The HW/SW IPT is reviewing options that may impact the actual implementation. Sybase installation on the local Remedy ARS server, as is the current practice is being considered as well as connectivity to remote Sybase servers.

#### **4.7.9 Conservation of ECS Resources**

There are no plans to upgrade Remedy for the HP Migration. Although the vendor has not certified 3.2.1 for Sybase 11.9.2, the vendor reports that many customers are using this Sybase version and no problems have been reported. Remedy support of Sybase has frequently been behind the curve on the latest Sybase versions. Support of Sybase 11.5.1 was made on the same assumptions and no problems have occurred. While there are upgrades to Remedy ARS available for Solaris 2.5.1, none are able to migrate to Solaris 8, so an upgrade would need to be made during the Solaris 8 upgrade and/or with the M&O Remedy/DDTS Removal initiative. Version 3.2.1 is approaching end-of-life, but the sales representative estimated that ECS would have at least 8 months before this occurs. The risk to not upgrading at this time appears low, especially since an upgrade or removal is targeted to occur within a year anyway.

### **4.8 Autosys 3.5 Upgrade**

#### **4.8.1 Description of COTS**

Autosys is an automated control system for scheduling, monitoring, and reporting on computer jobs. ECS uses Autosys to control PRONG (Processing) administrative jobs running on the DPS Queuing Server computer and science production jobs running on the science computers.

#### **4.8.2 Rationale for Upgrade**

The product is at end-of-life for the current baselined version: 3.4.2. It has also been identified that there is a known incompatibility with the baselined version 3.4.2 in regards to support of the Sybase ASE 11.9.2 upgrade being planned in the current rolling wave. Although no originally planned for this rolling wave, resources have been identified to mitigate these known risks. Only the Sun components will be upgraded at this time. The vendor has indicated that Remote Agent 3.4.2 will be compatible with the 3.5 upgraded Solaris components, until a 3.5 version for IRIX 6.5 is available. The vendor has indicated that they will continue to support 3.4.2 on IRIX 6.5 until the 3.5 version is available.

##### **4.8.2.1 Vendor Support**

Current baselined version of product is at end-of-life. Known incompatibilities with planned Sybase 11.9.2 have also been identified by the vendor. Upgrade to most recent version will mitigate both of these risks.

#### **4.8.2.2 NCR**

No NCRs have been identified in association with this COTS product.

#### **4.8.2.3 Features/Performance Upgrades**

No identified enhanced performance or additional features have been identified with this upgrade.

#### **4.8.2.4 Cross Software Product Compatibility**

Autosys has a Sybase ASE version dependency. Upgrade to version 3.5 will provide support for the current baselined Sybase ASE 11.5.1 and the planned Sybase 11.9.2 upgrade.

This version also supports Solaris 7 and Solaris 8, so that the product will not require an upgrade to migrate to a more recent version of the Solaris Operating System.

#### **4.8.2.5 Hardware Product Compatibility**

There are no known hardware product compatibility issues with this COTS product.

#### **4.8.3 Operational Impact**

Upgrade must occur prior to the Sybase ASE 11.9.2 upgrade, but is not associated with any other transition.

#### **4.8.4 Custom Code Impact**

No custom code impacts have been identified.

#### **4.8.5 Licensing Impact**

Product required licensing keys. Procedures to obtain and install licensing keys will be included in the PSR for the upgrade.

#### **4.8.6 External Drivers**

No external drivers have been identified.

#### **4.8.7 Other Impacts/Comments**

No other impacts have been identified for this COTS product upgrade.

#### **4.8.8 COTS Installation Sequence/Dependencies**

As identified in the Sybase ASE 11.9.2 upgrade and in Table 4-1, Autosys is required to be upgraded **PRIOR** to installation of Sybase ASE 11.9.2, because of known incompatibilities of the current baselined version of Autosys (3.4.2) with Sybase ASE 11.9.2.

## **4.9 AMASS 5.0 Upgrade**

### **4.9.1 Description of COTS**

AMASS is a COTS product from ADIC that provides File Storage Management System capabilities for ECS. Version 5.0 will include support for STK 9940 drives, which will replace the current STK D3 drives. Refer to section 5.2, ESD 95/D3 Drive Replacement for additional information on this transition.

### **4.9.2 Rationale for Upgrade**

Upgrade to version 5.0 of AMASS is planned in support of the STK D3 drive replacement transition. Version 5.0 is the first release that will provide support for the 9940 replacements.

#### **4.9.2.1 Vendor Support**

No end-of-life/end-of-support issues have been identified for this COTS product.

#### **4.9.2.2 NCR**

No NCRs have been identified against this COTS product

#### **4.9.2.3 Features/Performance Upgrades**

Support for STK 9940 drives is expected in this version release.

#### **4.9.2.4 Cross Software Product Compatibility**

No software product compatibilities have been identified with this COTS product.

#### **4.9.2.5 Hardware Product Compatibility**

Software version 5.0 has no hardware product compatibility issues. Support for 9940 hardware drives are included in this version.

### **4.9.3 Operational Impact**

This upgrade needs to be completed prior to the D3 replacement with the 9940 drives. Refer to section 5.2, ESD 95/D3 Drive Replacement for additional information on this transition.

### **4.9.4 Custom Code Impact**

No custom code impacts have been identified with this COTS upgrade.

### **4.9.5 Licensing Impact**

Product requires license keys. These will be requested with the upgrade media and will be provided in the PSR document.

#### **4.9.6 External Drivers**

No external drivers have been identified for this COTS product upgrade.

#### **4.9.7 Other Impacts/Comments**

No other impacts have been identified with this COTS product.

#### **4.9.8 COTS Installation Sequence/Dependencies**

AMASS 5.0 upgrade is required to occur prior to use of the 9940 drives that will replace the current D3 drives. Although an ACSLS Upgrade (discussed in the following section) is also planned in order to support the 9940 replacement of the D3 drives, the AMASS and ACSLS upgrades are not dependent on each other. The AMASS 5.0 software may be installed before or after the ACSLS 5.3.2 upgrade. The upgrade may be made while the D3 drives are still in place, but the AMASS upgrade (and the ACSLS 5.3.2 upgrade) must be completed in order to utilize the STK 9940 replacements of the D3 drives.

#### **4.9.9 Conservation of ECS Resources**

Migration to the most current GA version of AMASS will mitigate end-of-support risks in addition to providing support for 9940 drives.

### **4.10 ACSLS 5.3.2 Upgrade**

#### **4.10.1 Description of COTS**

Automated Cartridge System Library Software (ACSL) from StorageTek is a software package that runs the front-end for the STK Powderhorn or Wolfcreek tape silos.

#### **4.10.2 Rationale for Upgrade**

It has been identified that an upgrade is required of ACSLS software, in addition to the AMASS upgrade in order to support the STK 9940 drive replacements for the D3 drives.

##### **4.10.2.1 Vendor Support**

Support for the planned 9940 drive replacement of the current STK D3 drives is the only vendor support issue driving the upgrade. Although version 5.4 is currently available for this product, the vendor recommended that version 5.3.2 be used as features that were implemented in 5.4 would require additional resources and implementation steps, and that these “features” are planned be removed from future releases. Version 5.3.2 will fully support the 9940 drives, without requiring additional activities that would need to be reversed in upgrades to future releases.

##### **4.10.2.2 NCR**

No NCRs are identified in association with this COTS product.

#### **4.10.2.3 Features/Performance Upgrades**

No additional features or performance upgrades are expected from this upgrade.

#### **4.10.2.4 Cross Software Product Compatibility**

There are no known software product compatibility issues. The ACSLS upgrade is needed in addition to the AMASS 5.0 upgrade, but support of both product versions for the 9940 drives is the only compatibility driver. Refer to section 5.2, ESD 95/D3 Drive Replacement for additional information on this transition.

#### **4.10.2.5 Hardware Product Compatibility**

The vendor has recommended that this version of the ACSLS software be installed on an Ultra SPARC-based hardware. Some current implementations are installed on SPARC5s and SPARC20s, which are not Ultra SPARC-based hardware platforms. Initial testing has indicated that a memory upgrade utilizing currently available memory chips may be sufficient to support this upgrade. Upgrade of these hosts is under review.

#### **4.10.3 Operational Impact**

This upgrade is part of the ESD 95/D3 Replacement Transition, which will replace existing D3 drives with 9940 drives.

#### **4.10.4 Custom Code Impact**

There are no identified custom code impacts associated with this COTS product.

#### **4.10.5 Licensing Impact**

There are no licensing issues with this software but it may only be installed on the appropriate hardware.

#### **4.10.6 External Drivers**

No external drivers have been identified for this COTS product.

#### **4.10.7 Other Impacts/Comments**

No other impacts have been identified for this COTS product.

#### **4.10.8 COTS Installation Sequence/Dependencies**

There are no COTS software dependencies for this product. The ACSLS software may be installed before or after the AMASS 5.0 upgrade. The upgrade may be made while the D3 drives are still in place, but the ACSLS 5.3.2 upgrade (and the AMASS 5.0 upgrade) must be completed in order to utilize the STK 9940 replacements of the D3 drives. Installation sequence and dependencies will be discussed in the EDS 95/D3 Replacement Transition documentation.

## **4.11 Purify 5.3 Upgrade**

### **4.11.1 Description of COTS**

Purify is used in Software development to support debugging by identifying memory related bugs in code.

### **4.11.2 Rationale for Upgrade**

Problems have been identified in current Purify version for the Solaris operating system, version 4.5.1. These problems impact efficient debugging of code. In addition, IRIX and Solaris are currently at different versions of Purify and version consistency of the same product is preferred when possible. The upgrade version will also provide support for 64-bit as well as 32-bit code on SGIs. Version 5.3 also provides support for Solaris 7, Solaris 8 and IRIX 6.5 versions and would mitigate end-of-support risks for the product.

#### **4.11.2.1 Vendor Support**

Current baseline versions are currently supported. Upgrade to the most recent version will provide additional risk mitigation. The COTS product vendor, Rational Software, has estimated that this version will become generally available after the first of the year, 2001.

#### **4.11.2.2 NCR**

No NCRs are identified in association with this COTS product.

#### **4.11.2.3 Features/Performance Upgrades**

Improved debugging features and support for 64-bit code on SGIs are expected and desired features of the COTS upgrade.

#### **4.11.2.4 Cross Software Product Compatibility**

There are no known software product compatibility issues.

#### **4.11.2.5 Hardware Product Compatibility**

There are no hardware product compatibility issues with this COTS product.

### **4.11.3 Operational Impact**

COTS product upgrade is not part of any transition. Installation is independent of other COTS products and hardware devices.

### **4.11.4 Custom Code Impact**

There are no identified custom code impacts associated with this COTS product.

#### **4.11.5 Licensing Impact**

License keys are required for this COTS product. Procedures to obtain/install the license keys will be included with the PSR.

#### **4.11.6 External Drivers**

No external drivers have been identified for this COTS product.

#### **4.11.7 Other Impacts/Comments**

No other impacts have been identified for this COTS product.

#### **4.11.8 COTS Installation Sequence/Dependencies**

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

### **4.12 Secure Shell (ssh) Upgrade**

#### **4.12.1 Description of COTS**

Secure Shell (ssh) provides a secure replacement of the “r” commands rlogin (remote login), rsh (remote shell), and rcp (remote copy). The “r” commands make a user’s life easier but are very insecure. The Secure Shell programs ssh (provides both remote login and remote shell), scp (secure copy) keep a user’s life easy but provide strong authentication (required for interactive access to ECS computer assets) and encryption. User names and passwords are never sent in clear text over the network.

#### **4.12.2 Rationale for Upgrade**

Problems have been identified in the current 2.0.13 version of ssh. Problems with host-based connections and runaway daemon processes have been identified. The COTS product will be upgraded to version 2.3.1 to resolve these problems.

##### **4.12.2.1 Vendor Support**

Vendor support risks will be mitigated with this upgrade, as the vendor actively supports only the most current version.

##### **4.12.2.2 NCR**

An NCR will be issued against the current version. The NCR number is not available at this time.

##### **4.12.2.3 Features/Performance Upgrades**

No additional features or performance upgrades are expected with this upgrade.

#### **4.12.2.4 Cross Software Product Compatibility**

There are no known software product compatibility issues.

#### **4.12.2.5 Hardware Product Compatibility**

There are no hardware product compatibility issues with this COTS product.

#### **4.12.3 Operational Impacts**

Installation is independent of other COTS products and hardware devices. Systems Engineering will provide training related to this upgrade.

#### **4.12.4 Custom Code Impact**

There are no identified custom code impacts associated with this COTS product.

#### **4.12.5 Licensing Impact**

There are no licensing keys associated with this product upgrade.

#### **4.12.6 External Drivers**

No external drivers have been identified for this COTS product.

#### **4.12.7 Other Impacts/Comments**

No other impacts have been identified for this COTS product.

#### **4.12.8 COTS Installation Sequence/Dependencies**

No installation sequence dependencies or other COTS product dependencies have been identified for this COTS product.

#### **4.12.9 Conservation of ECS Resources**

Upgrade to the most current version will mitigate end-of-support risk as vendor actively supports only the most current version release of products.

### **4.13 Tripwire 1.3 Upgrade for Solaris/Anlpassword Replacement**

#### **4.13.1 Description of COTS**

Tripwire and Anlpassword are security-related freeware products. Corruption problems have been identified with Anlpassword and the freeware product has not been upgraded or “supported” for sometime. Tripwire 1.3 is the last planned upgrade of freeware product. Both freeware products provide password security utilities. Possible COTS replacements for these products are being considered in recent NPG 2810-1 (Security of Information Technology) submission. Planning for these upgrades/replacements is dependent on response to this

submission. If approved upgrades will be added to the CUT Matrix and updated on a weekly basis (Refer to Appendix A for recent CUT Matrix).

#### **4.13.2 Rationale for Upgrade**

Corruption problems with Anlpassword have identified the freeware product for replacement. Although no known problems currently exist for the tripwire freeware product, it is known that no further work is planned for the freeware version. There are risks with both freeware products that lack of support and/or the inability to upgrade the product will impact capabilities to meet ECS security requirements. COTS replacements are being proposed in the recent NPG 2810-1 (Security of Information Technology) submission.

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## 5. COTS Hardware Upgrades

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The following COTS hardware products are planned for upgrade. This section identifies the COTS hardware products that will be upgraded and the rationale used to justify this upgrade. Any firmware upgrades, either standalone firmware upgrades, or upgrades associated with a specific hardware upgrade will also be discussed in this section.

Defects for individual hardware items are addressed by a Maintenance Work Order (MWO). Identification of problems, such as performance, features, or other defects that may be related to a class of hardware is usually identified by Operating System or other COTS software NCRs.

### 5.1 HP Removal/Migration to Solaris

The HP Migration Plan targeted for the end of January 2001 will provide additional detail on this activity. In addition, the CUT Matrix (Refer to Appendix A for recent CUT Matrix) will be updated weekly to provide status on the overall HP Migration and the specific COTS and custom code impacted by this Transition. Based on targeted PSR completion dates, the migration from HP to Sun is targeted for completion by June 2001. It should be noted that the Science Office will continue to use an HP B2000 for Toolkit support on HP-UX 11.0. An HP supporting Toolkit running HP-UX 10.20 will be retained as long as the operating system is required for Toolkit. This sever will continue to be used and maintained in the EDF for Toolkit support.

#### 5.1.1 Description of COTS

The MSS HP hardware removal is based on a planned migration of the current MSS HP-unique COTS and custom software to the Sun hardware platform. The specific COTS and custom code impacts are identified in section 5.2.3, Software Impact (COTS/Custom). The specific COTS products migration, upgrade or removal are discussed in detail above in section 4, COTS Software Upgrades.

#### 5.1.2 Rationale for Upgrade

Although there are relatively few HP machines still in use in ECS, the maintenance costs have continued to be substantial. Additional cost savings will also be realized in downsizing to 2 Operating System Platforms in terms of COTS/custom upgrade support and administration. An upgrade of the HP-UX Operating System would also be required for current support of some COTS products, such as Sybase ASE. Avoiding a major operating system upgrade would also provide cost savings.

In initial analysis, it was identified that all COTS products that were unique to the HP were also supported on the current Solaris Operating System, Solaris 2.5.1. Additional analysis also identified that there would be no licensing impacts to transfer these COTS to an alternative platform, with the exception of DBXcessory. Although there was a minor amount of custom code on the HPs, no issues or impacts were identified with migration of this code to an alternative host.

Six months of maintenance was purchased for HP Servers. Any server still operational after June 2001 will be on time and materials maintenance until it can be removed from the baseline. This will minimize overall costs.

#### **5.1.2.1 Hardware/Software Product Compatibility**

No hardware/software product compatibility issues were identified. All COTS software identified for migration are also supported by the vendor on the current Solaris 2.5.1 Operating System. No issues/impacts were identified to the migration of a minor amount of custom code.

#### **5.1.2.2 Equipment End-of-Life/End-of-Support**

No equipment end-of-life or end-of-support was a major factor in this migration.

#### **5.1.2.3 Features/Performance Upgrades**

No features or performance improvements are expected from this migration.

#### **5.1.3 Software Impact (COTS/Custom)**

Many of the COTS products running on HP-UX were also already running on Solaris 2.5.1. The initial analysis identified the following COTS as HP-unique COTS, i.e., COTS that currently ran only on HP machines. These included:

- DBVision (refer to section 4.3, DBVision HP to Sun Migration)
- Remedy ARS (refer to section 4.7, Remedy ARS HP to Sun Migration)
- Tivoli Server ARS (refer to section 4.6, Tivoli Server TEC/Framework 3.6.3 Upgrade and Tivoli Server HP to Sun Migration)
- OpenView ARS (refer to section, 4.5, OpenView 6.1 Upgrade and HP to Sun Migration)
- DCE Cell Manager Management Agent (Server) ARS (refer to section 4.4, DCE Cell Manager HP to Sun Migration)
- DBXcessory ARS (refer to section 4.2, DBXcessory HP Migration Removal)
- HP Softbench

HP Softbench would not require migration since an alternative platform-specific environment is in use on the Solaris platform (Visual Workshop and SPARC FORTRAN compilers). The remaining COTS products planned for migration are discussed in detail in section 4, COTS Software Upgrades.

For custom software, DAR-MAIN will be migrated to the INS01 host and the EcMsTtMSSSRVR (trouble ticket GUI) will migrate with Remedy to the identified Solaris migration host. Delivery of these custom code products, is being planned. Details will be provided in HP Migration Plans.

#### **5.1.4 Network Impacts**

The MSS Application Server has 100 baseT for the primary network connect. The HP primary connection is 10 baseT. If the firewall installation occurs before this conversion, a second network interface is not required. If this installation occurs first, the existing FDDI card will be configured to connect to the user network.

#### **5.1.5 DAAC Facility Impacts**

HP Migration Plan targeted for completion at the end of January will provide details related to DAAC Facility impacts.

#### **5.1.6 Transition Impacts**

HP Migration Plan targeted for completion at the end of January will provide details related to Transition impacts.

#### **5.1.7 External Drivers**

No external drivers have been identified related to this migration.

#### **5.1.8 Other Impacts/Comments**

No other impacts have been identified related to the HP Migration.

#### **5.1.9 COTS Installation Sequence/Dependencies**

The HP-unique COTS products and custom code are required to be PSRd, installed and verified to be operational prior to removal of the HP machines at the DAACs.

### **5.2 ESD 95/D3 Drive Replacement**

#### **5.2.1 Description of COTS**

The ECS archive design is currently based on Storage Technology Corporation (STK) RedWood SD-3 tape drives. On November 30, 1999, STK announced the end of life of the RedWood SD-3 tape drive and media. Currently, STK is not accepting orders for new drives and plans no further enhancements to this product line.

#### **5.2.2 Rationale for Upgrade**

Although STK will continue to maintain ECS drives under the terms and conditions of their maintenance contract until October 2002, a decision has been reached to proceed with replacement of the D3 drives with STK 9940 drives. Upgrades to the 9940 drives will be implemented for the following reasons:

- Next generation archive technology
- More economical and reliable
- Support of more data in the same space.

### **5.2.2.1 Hardware/Software Product Compatibility**

Upgrades of two COTS software products are required to utilize the 9940 replacement drives. An upgrade of AMASS to version 5.0 and an upgrade of ACSLS to version 5.3.2 is required to utilize the 9940 drives that will replace the D3 drives. Refer to section 4.9, AMASS 5.0 Upgrade and section 4.10, ACSLS 5.3.2 Upgrade for additional information related to these upgrades.

### **5.2.2.2 Equipment End-of-Life/End-of-Support**

End-of-life support for D3 drives is a major factor in driving the decision to replace these drives.

### **5.2.2.3 Features/Performance Upgrades**

There are currently 49 D3 drives on the ECS program. ECS has had 70 replacements from November 1996 to August 2000. The failures are due to excessive head wear, load/unload failures, servo failure, and tape path tracking. The advertised MTBF for the SD-3 drive is 2491 head hours. The actual MTBF is 1000 head hours.

The SD-3 has a native capacity of 50GB. The 9940 tape native capacity is 60 GB. ECS Capacity Requirements will grow as the earth science data continues to be collected. The projected capacity of is 3382TB.

The SD-3 tape is rated at 8.6MB/Sec where the 9940 has a transfer rate of 10MB/Sec.

### **5.2.3 Software Impact (COTS/Custom)**

AMASS and ACSLS COTS upgrades will be required for utilization of the 9940 drives. There are no custom code impacts. Refer to section 4.9, AMASS 5.0 Upgrade and section 4.10, ACSLS 5.3.2 Upgrade for additional information related to these upgrades.

### **5.2.4 Network Impacts**

No network impacts have been identified for this hardware upgrade.

### **5.2.5 DAAC Facility Impacts**

No DAAC Facility impacts are expected.

### **5.2.6 Transition Impacts**

Migration of data from the D3 tapes/media to the replacement 9940 drives/media will be required as part of this transition. Additional information on this subject has been provided in the ESD 95 White Paper.

### **5.2.7 External Drivers**

No external drivers have been identified for this archive drive replacement.

### **5.2.8 Other Impacts/Comments**

No other impacts have been identified for this archive drive replacement.

## **5.2.9 COTS Installation Sequence/Dependencies**

The AMASS 5.0 and ACSLS 5.3.2 COTS software upgrades are required for utilization of the replacement 9940 drives. Migration of existing D3 data to the replacement 9940 drives/media will be required before the D3 drives are removed.

## **5.3 Firewall Implementation**

### **5.3.1 Description of COTS**

A firewall is under review for implementation by June 2001. Approval is expected by January 2001. Additional information and a firewall transition plan will be provided when approved.

### **5.3.2 Rationale for Upgrade**

The additional security protection that can be provided with a firewall implementation is the primary rationale for this proposed new implementation. The additional security features are expected to reduce DAAC production network downtime due to network security issues and denial-of-service attacks.

#### **5.3.2.1 Hardware/Software Product Compatibility**

Hardware/Software products proposed for the implementation are compatible and support existing and planned network requirements. The Firewall Implementation will utilize new hardware and software with the software delivered pre-installed on the hardware devices. Additional information will be provided in a Firewall Transition Plan that is planned to be developed if the Firewall implementation is approved.

#### **5.3.2.2 Equipment End-of-Life/End-of-Support**

No end-of-life or end-of-support issues are applicable to this proposed new implementation. The most recent software versions will be utilized.

#### **5.3.2.3 Features/Performance Upgrades**

Improved security features are the primary driver for the firewall implementation.

### **5.3.3 Software Impact (COTS/Custom)**

No impacts have currently been identified to COTS or custom code. This research and analysis is continuing and any related information will be provided if identified in the Firewall Implementation Plan or other method to resolve or mitigate any conflicts that may be identified.

### **5.3.4 Network Impacts**

The network impacts will be identified in a Firewall Implementation Plan if approved.

### **5.3.5 DAAC Facility Impacts**

The DAAC facility impacts will be identified in a Firewall Implementation Plan if approved.

### **5.3.6 Transition Impacts**

Firewall Implementation Plan will provide information on operational impacts.

### **5.3.7 External Drivers**

No external drivers have been identified for the proposed Firewall Implementation.

### **5.3.8 Other Impacts/Comments**

No other impacts have been identified for the Firewall Implementation.

### **5.3.9 COTS Installation Sequence/Dependencies**

There are no known dependencies with other COTS HW/SW upgrades besides those proposed for the Firewall implementation.

## **5.4 SGI 3800 and Origin Installations at LaRC**

### **5.4.1 Description of COTS**

The existing l0spg10, an SGI Origin 2000/400Mhz machine, will be reconfigured to replace the Challenge server l0drg01 as the host of the primary AMASS silo at LaRC, it will be called l0drg04. A new FC RAID will be added to this system for amasscache and l0\_buffer. The FSMS server will utilize IRIX 6.5.6m

The SGI Origin 3800 will be installed and configured to support the SPG subsystem as the final l0spg10 machine (with the existing FC RAID). The Science Processor will be installed with IRIX 6.5.9m. Implementation support will be provided by Hardware Engineering. Implementation is targeted for January, depending on the Origin 3800 delivery.

### **5.4.2 Rationale for Upgrade**

LaRC only has one STMGT archive. The smooth conversion of the data from SD-3 to 9940 tapes depends on fast Input/Output. The Challenge system will not have the capacity to perform both archive and conversion functions without a noticeable slowdown to production. The Origin 2000 with FC RAID will be able to meet this requirement.

The Origin 3800 for SPR will provide 8000 Mflops of processing power. The 2002 total for LaRC processing as shown in the F&PRS is 9680.40Mflops.

Support for the SPG subsystem is the rationale for the l0spg10 implementation.

#### **5.4.2.1 Hardware/Software Product Compatibility**

With the implementation of these machines at IRIX 6.5.9, there should be hardware/software compatibility.

#### **5.4.2.2 Equipment End-of-Life/End-of-Support**

There are no equipment end-of-life and/or end-of-support issues identified with this implementation.

### **5.4.2.3 Features/Performance Upgrades**

The planned IRIX 6.5.9 implementation will provide the necessary support for increased performance expected from these recent Origin machines.

### **5.4.3 Software Impact (COTS/Custom)**

No COTS or custom software impacts have been identified with this implementation.

### **5.4.4 Network Impacts**

No network impacts have been identified with this implementation.

### **5.4.5 DAAC Facility Impacts**

No DAAC facility impacts are expected with this implementation.

### **5.4.6 Transition Impacts**

Implementation is associated with the IRIX 6.5 transition.

### **5.4.7 External Drivers**

No external drivers have been identified for this implementation.

### **5.4.8 Other Impacts/Comments**

No other impacts have been identified with this implementation.

### **5.4.9 COTS Installation Sequence/Dependencies**

The installation will follow the identified sequence and dependencies in the IRIX 6.5.9 PSR for the SPG Origin 3800, and will follow the identified sequence and dependencies of the IRIX 6.5.6 PSR for the FSMS Origin 2400.

## **5.5 Product Distribution System (PDS) Implementation**

### **5.5.1 Description of COTS**

PDS is a GOTS (Government Off-the-Shelf) Product Distribution System targeted for implementation at all DAACs.

### **5.5.2 Rationale for Upgrade**

Rationale is to provide additional distribution requirements in 5B timeframe. Product Distribution System (PDS) for DAAC utilization will also include DVD distribution in FY 02.

#### **5.5.2.1 Hardware/Software Product Compatibility**

The proposed PDS components are implemented in a compatible hardware/software environment. Implementation is currently being defined for implementation at all DAACs. Additional information will be provided when the final configuration is approved.

### **5.5.2.2 Equipment End-of-Life/End-of-Support**

There are no direct end-of-life and/or end-of-support issues driving this upgrade.

There is one end-of-life issue that needs to be noted for future upgrades. Oracle Database currently planned for usage within PDS on IRIX will have one more new release (8.1.7) on SGI IRIX 6.5. This will be the last release on SGI. Oracle has confirmed that product will be supported on IRIX 6.5 for at least two years after that date.

### **5.5.2.3 Features/Performance Upgrades**

PDS Implementation will provide a Product Distribution System for the DAACs in a timely manner.

### **5.5.3 Software Impact (COTS/Custom)**

Additional information on this area, if applicable, will be provided by the PDS Implementation group. However COTS required for PDS will not be PSRed.

### **5.5.4 Network Impacts**

Additional ethernet concentrators will be added to the solution to support multiple printers and Rimage devices which will be 10/100 baseT.

### **5.5.5 DAAC Facility Impacts**

Additional information on this area, if applicable, will be provided by the PDS Implementation group.

### **5.5.6 Transition Impacts**

Additional information on this area, if applicable, will be provided by the PDS Implementation group.

### **5.5.7 External Drivers**

Additional information on this area, if applicable, will be provided by the PDS Implementation group.

### **5.5.8 Other Impacts/Comments**

Additional information on this area, if applicable, will be provided by the PDS Implementation group.

### **5.5.9 COTS Installation Sequence/Dependencies**

The PDS Origin will support IRIX 6.5.9. This is necessary to support the tp9400 RAID software and Java 3.2.1 Additional information on this area, if applicable, will be provided by the PDS Implementation group.

## **5.6 GSFC SPR Upgrades**

### **5.6.1 Description of COTS**

G0spg10 will be upgraded with 8 additional CPUs to increase the processing an additional 1600 Mflops. An Origin 3000 will be added with 12 CPUs to increase the processing an additional 2400 Mflops

#### **5.6.1.1 Hardware/Software Product Compatibility**

There are no identified hardware/software compatibility issues.

#### **5.6.1.2 Equipment End-of-Life/End-of-Support**

There are no end-of-life/end-of-support issues associated with this upgrade.

#### **5.6.1.3 Features/Performance Upgrades**

The CPU upgrade will increase the processing power from 5120 to 6720 in FY 01. The F&PRS requirements at FY01 is 6400. In early FY02, an Origin 3000 will be installed to add additional processing to move the total Mflops to 9120. The F&PRS calls for 8340.

### **5.6.2 Software Impact (COTS/Custom)**

The new system will be configured to the SPR baseline.

### **5.6.3 Network Impacts**

No network impacts have been identified.

### **5.6.4 DAAC Facility Impacts**

There are no identified DAAC facility impacts associated with this upgrade.

### **5.6.5 Transition Impacts**

Upgrade is not associated with any transition or other COTS upgrade.

### **5.6.6 External Drivers**

No external drivers have been identified for this upgrade.

### **5.6.7 Other Impacts/Comments**

No other impacts have been identified with this upgrade.

### **5.6.8 COTS Installation Sequence/Dependencies**

There are no identified installation sequence or dependencies that are related to this upgrade.

## **5.7 AIRS Processing and Archive**

### **5.7.1 Description of COTS**

An Origin 3800 with 24 CPUs will be installed for AIRS processing. The Queuing server will also be upgraded with additional CPUs to support the additional load. 9940 drives will be added to the archive to store the additional data processed.

#### **5.7.1.1 Hardware/Software Product Compatibility**

Dependent on the ESD 95 implementation.

#### **5.7.1.2 Equipment End-of-Life/End-of-Support**

There are no end-of-life/end-of-support issues associated with this upgrade.

#### **5.7.1.3 Features/Performance Upgrades**

This is a new requirement via ESD 107 that will be met by this upgrade.

### **5.7.2 Software Impact (COTS/Custom)**

The new system will be configured to the SPR baseline.

### **5.7.3 Network Impacts**

No network impacts have been identified.

### **5.7.4 DAAC Facility Impacts**

DAAC facility impacts associated with this upgrade will be provided in the hardware design, network and baseline documents. 920-TDx-004 (Floor Plan) and 920-TDx005 (Cable Management Plan).

### **5.7.5 Transition Impacts**

Upgrade is not associated with any transition or other COTS upgrade.

### **5.7.6 External Drivers**

No external drivers have been identified for this upgrade.

### **5.7.7 Other Impacts/Comments**

No other impacts have been identified with this upgrade.

### **5.7.8 COTS Installation Sequence/Dependencies**

There are no identified installation sequence or dependencies that are related to this upgrade.

## Appendix A. CUT (COTS Upgrade Team) Status Table

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Development Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Installation Comments	Status (Date)
COTS Upgrades for implementation from 01/01/2001 through 06/30/2001									
Tripwire on Sun/HP	1.2	1.3	Consistent version on all platforms. Not high priority.	N/A	01/12/2001	01/19/2001	02/08/2001	Install when PSR is completed. No other COTS or custom code dependencies	12/06/2000: Planning is awaiting response to NPG 2810-1 (Security of Information Technology) submission. A supported COTS product is preferred to unsupported freeware. Capabilities included in this submission could possibly replace this freeware product. If upgrade proceeds, HP will not be upgraded since an HP migration is planned.
AMASS	4.12.4	5.0	Version targeted will support STK 9940 drives that are planned to replace D3 drives.	N/A	01/23/2001	02/06/2001	02/14/2001	Install when PSR is completed. No other COTS or custom code dependencies	11/22/2000: Version 4.13.1 does not include support for STK 9940 drives. Version 5.0 is version that will include STK 9940 drive support. Version 5.0 is due to be released 01/09/2001. Upgrade will be planned when version is released. 12/06: No Change.
Sybase ASE & Sybase SQL Server Monitor	11.5.1	11.9.2.3 for Sun & 11.9.3.x for SGI	Vendor Support on current operating system versions. 11.5.1 will reach end-of-support on 12/31/2000.	<del>12/18/2000</del> 12/11/2000	08/20/2001	09/19/2001	TBD	Upgrade to Autosys 3.5 and Tivoli Server Enterprise Console and Framework need to be completed prior to Sybase ASE 11.9.2 upgrade.	12/06: Sybase 11.9.2/11.9.3 upgrade kick-off meeting currently scheduled for 12/11/2000.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Development Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Installation Comments	Status (Date)
Autosys	3.4.2	3.5	B/L version at end-of-life. Upgrade version will migrate to Solaris 7 or 8.	Jan. 2001	TBD	TBD	TBD	Autosys upgrade must be completed prior to Sybase ASE 11.9.2 upgrade	12/06: Autosys Technical support has indicated that there are known incompatibilities of version with Sybase 11.9.2. An Autosys-named column has become a reserved word in 11.9.2. Because of both end-of-life issues and incompatibilities with planned Sybase 11.9.2 upgrade, Autosys upgrade will be included in current rolling wave. Work is planned to begin in January 2001.
Purify	4.5.1	5.3 on Sun & SGI	Problems with current version indicated upgrade needed to facilitate development activities. 5.3 will support Solaris 2.5.1/Solaris 8/IRIX 6.5.6 +.	02/16/2001	05/29/2001	06/15/2001	06/25/2001	Install when PSR is completed. No other COTS or custom code dependencies	11/22: Version 5.3 is targeted for GA release 12/31/2000. Planning will await version release. 12/06: No Change.
HP Migration to Solaris									
DBVision	3.1.8	3.1.8	Remove HP Hosts from baseline/minimize maintenance costs & support cost for 3rd OS.	01/15/2001	02/12/2001	03/01/2001	03/09/2001	Tentatively targeting migration to DMS host. Install when PSR is completed. No other COTS or custom code dependencies.	11/22: Kick-off planned for 01/04/2001. Software available in CM COTS Library. 12/06: No change.
Remedy	3.2.1	3.2.1	No upgrade planned/while not certified for planned Sybase 11.9.2, Remedy reports customer usage with no problems. end-of-life not expected until at least 7/2001. Version	01/19/2001	02/20/2001	03/08/2001	03/16/2001	Tentatively targeting migration to MSS secondary host.	11/22: Kick-off planned for 01/10/2001. Software available in CM COTS Library. 12/06: No change.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Development Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Installation Comments	Status (Date)
			supporting both Solaris 2.5.1 and 8 not available.						
Open View	6.00	6.1	Support HP migration and upgrade to version 6.1 as PSR is required for new OS and 6.1 is a minor upgrade and should have minimal impact. Version 6.1 supports Solaris 8, 6.0 is not supported for this OS.	02/07/2001	04/09/2001	05/01/2001	05/09/2001	Tentatively targeting migration to MSS secondary host.	12/13: Kick-off planned for 01/17/2001. 6.1 CD Media is available in CM Software Library.
Tivoli Server	3.6	Enterprise Console/Framework only to 3.6.3	Upgrade of some Tivoli Server components to 3.6.2 required for current Sybase 11.5.1 and planned Sybase 11.9.2 compatibility.	02/12/2001	04/12/2001	05/03/2001	05/11/2001	Tentatively targeting migration to MSS secondary host.	11/22: Kick-off planned for 01/18/2001. Upgrade to 3.6.3 for Enterprise Console and Framework required for planned Sybase ASE 11.9.2 upgrade. Other Tivoli Server and Client components will not need upgrade. Software upgrade request is in progress. 12/06: No change.
DCE Cell Manager	1.6.2	1.6.2	Provide functionality available with CDS Browser (HP only SW) that will no longer be available after HPs are removed.	01/22/2001	02/22/2001	03/08/2001	03/16/2001	Tentatively targeting migration to CSS host.	12/13: Kick-off planned for 01/11/2001. Software versions available in CM COTS Library. Solaris migration host is tentatively targeted to the CSS host.

Early COTS for preliminary work related to upgrade of Solaris ..... not to be completed in 01/01/2001 through 06/30/2001 timeframe ... will be completed with Solaris Upgrade.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Development Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Installation Comments	Status (Date)
Solaris	2.5.1	8	In preparation for Solaris Upgrade activities	TBD	TBD	TBD	PSR needed eventually, but not at this stage.	N/A	11/22: Version available in COTS Library. Work continues on the executive decision on when to upgrade Solaris. We are preparing a cost/benefit analysis for the program manager. Since we will not be buying Transarc DCE 3.1, porting the ECS custom code to Solaris 8 can't be started until the sockets code is available in April. 12/06: No change.
Solaris Compilers: C, C++ and FORTRAN77	4.2	5.1p1 (or version comp. with RW tools)	Required for Rogue Wave & Solaris 8 compatibility.	04/17/2001	TBD	TBD	Only FORTRAN77 will need PSR.	Delivery with Custom code with Solaris Upgrade	11/22: Software upgrade versions request in progress. Work will not begin until code without DCE is available. 12/06: No change.
Visual Workshop for C++	3	5.1p1 (or version comp. with RW tools)	Required for Rogue Wave & Solaris 8 compatibility.	04/17/2001	08/08/2001	TBD	PSR with or after Solaris Upgrade	Version planned to be delivered should be installed only after Solaris Upgrade, as specified in the Solaris Upgrade Transition Plan.	11/22: Software upgrade versions request in progress. Work will not begin until code without DCE is available. 12/06: No change.
Rogue Wave DBTools/Tools/ToolsPro	DBTools 3.1.4 / Tools 7.0b/ ToolsPro 1.1.1	DBTools 4.2 / Tools TBD/ ToolsPro TBD	Required for Rogue Wave & Solaris 8 compatibility	04/17/2001	N/A	N/A	N/A: delivered with custom code	Delivery with Custom code with Solaris Upgrade	11/22: Software upgrade versions not expected to be available prior to 3/2001. Inquiring if beta versions are available. Work will not begin until code without DCE is available. 12/06: No change.
Builders Xcessory	5.0.3	5.x	Required for Solaris 8 Motif compatibility - Motif version change in Solaris 8.	04/18/2001	N/A	N/A	N/A: delivered with custom code	Delivery with Custom code with Solaris Upgrade	11/22: Software upgrade versions request in progress. Solaris 8 versions are available, but full 2.1 Motif support not currently available. Work will not begin until code without DCE is available. 12/06: No change.

Product Name	Baseline Version	Planned Upgrade Version	Upgrade Rationale	Development Kick-off	Turnover to Test Date	Turnover to M&O date	PSR Date	Installation Comments	Status (Date)
JAVA SDK	1.2.1	1.3	Required for Solaris 8 compatibility	05/08/2001	N/A	N/A	N/A: delivered with custom code	Delivery with Custom code with Solaris Upgrade	11/15: In planning 12/06: No change.
HDF	4.1r3 Solaris 2.5.1 binary	4.1r3 Solaris 8 binary	Identify if 2.5.1 version is binary compatible or include Solaris 8 version in PSR for Sun in PSR scheduled for this rolling wave.	05/08/2001	N/A	N/A	N/A: delivered with custom code	Review to identify if current version is binary compatible on Solaris 8	11/15: Current source version will be recompiled. 12/06: No Change.
XVT DSC	4.6	5	Upgrade required for Solaris 8	05/08/2001	N/A	N/A	N/A: This task for EDF custom code only.	N/A	11/22: Software upgrade request in progress. Work will not begin until code without DCE is available. 12/06: No change.
ClearCase in the EDF	3.2.1	4.1	Version 3.2.1 at end-of-life. 4.x required to support Solaris 8 build environment. Reformatting VOBs appears not to be required for 4.x. Vendor has identified 4.1 will also support IRIX 6.5.2 and beyond. PSR will upgrade Sun 2.5.1 (with future support for Solaris 8) and IRIX 6.5.6/6.5.9.	TBD	TBD	TBD	This 01/01/2001-03/30/2001 rolling wave task for EDF custom code only.	TBD	12/13: Work in currently in progress to update scripts used in previous upgrades. EDF Upgrades are expected to begin mid-January and planned for completion by the end-of-February. Version 4.1 is in-house and is available for upgrade.

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## Appendix B. COTS Compatibility Matrix

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
Acrobat Reader for SGI	4.05	Freeware									
			Acrobat Reader for SGI	None						N/A	N/A
Acrobat Reader for Solaris	3	Freeware									
			Acrobat Reader for Solaris	4.05	X	X	X			N/A	Current
ACSLs	5.3	COTS									
			ACSLs	5.4		X				N/A	Current
			ACSLs	6		?	X			N/A	2Q2001
AMASS	4.12.3	COTS									
			AMASS	4.12.4				X		N/A	Current
			AMASS	4.13.1				X		N/A	Current
			AMASS	5				X	X	N/A	01/09/2001
Anlpassword	2.3	Freeware									
			Anlpassword	None	X	X	X	X	X	N/A	N/A
AutoSys Remote Agent for	3.4.2	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
SGI											
			AutoSys Remote Agent for SGI	3.4.4				3.4.2 client	3.4.2 client	See Autosys Server versions	TBD
			AutoSys Remote Agent for SGI	3.5				3.4.2 client	3.4.2 client	See Autosys Server versions	TBD
			AutoSys Remote Agent for SGI	3.6				?	?	See Autosys Server versions	TBD
AutoSys Remote Agent for Sun	3.4.2	COTS									
			AutoSys Remote Agent for Sun	3.4.4	X					See Autosys Server versions	Current
			AutoSys Remote Agent for Sun	3.5	X	X	X			See Autosys Server versions	Current
			AutoSys Remote Agent for Sun	3.6	?	?	?			See Autosys Server versions	No announced date
AutoSys Server	3.4.2	COTS									
			AutoSys	3.4.4	X					ASE 11.5.1/11.9.2/12; OpenClient on Sun (11.1.1) & SGI(12)/ASE 11.5.1/11.9.x	Current
			AutoSys	3.5	X	X	X w/patch			ASE 11.5.1/11.9.2/12; OpenClient on Sun (11.1.1) & SGI(12)/ASE 11.5.1/11.9.x/12.0	Current
			AutoSys	3.6	?	?	?			TBD	No announced date

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
AutoSys Xpert	3.4.2	COTS									
			AutoSys Xpert	3.4.4	X					OpenClient/backward compatibility would allow support for OC 12	Current
			AutoSys Xpert	3.5	X	X	X			OpenClient/backward compatibility would allow support for OC 12	Current
			AutoSys Xpert	3.6	?	?	?			OpenClient/backward compatibility would allow support for OC 12	No announced date
BDS	2.1p0	COTS									
			SGI BDS	2.3					X	N/A	Current
Cabletron Ethernet Hub BOOTPROM	1.33.02	Firmware									
			Cabletron Ethernet Hub BOOTPROM	None						N/A	N/A
Cabletron Ethernet Hub Flash Image	1.33.02	Firmware									
			Cabletron Ethernet Hub Flash Image	None						N/A	N/A
Catalyst IOS	5.3.4 CX	Firmware									
			Catalyst	12.2						N/A	No Announced availability

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
											date
CDCreation	2	COTS									
			CDCreation	x.x	X	X	expected but not certified			N/A	TBD
Cisco Router IOS	12.1T	Firmware									
			Cisco Router IOS	12.2						N/A	2Q2001
			Cisco Router IOS	13						N/A	2Q2002
Cisco Router Release SE (fcl)ROM: GS software (RSP-JV-M)	12.1T	Firmware									
			Cisco Router Release SE (fcl)ROM: GS software	12.2						N/A	2Q2001
			Cisco Router Release SE (fcl)ROM: GS software	13						N/A	2Q2002
Cisco Router System Bootstrap	12.1T	Firmware									
			Cisco Router System Bootstrap	12.2						N/A	2Q2001
			Cisco Router System Bootstrap	13						N/A	2Q2002
ClearCase	3.2.1	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			ClearCase	4	X	X	X	X		N/A	Current
			ClearCase	4.1	X	X	X	X	X	N/A	Current for Solaris 7/8; TBD for IRIX 6.5.9
Crack	4.1	Freeware									
			Crack	5	X	X	X			N/A	Current
DB Vision	3.1.8	COTS									
			DBVision (Managet Performance)	Manage IT Performance 4.2	X	X				Sybase ASE 11.x & 12.0	Current
			DBVision (Managet Performance))	Manage IT Performance 4.3	?	?	X?			TBD	TBD
DBXcessory	1.5	COTS									
			DBXcessory	5	X	X	X			Supports Sybase 12	9/2000
DCE Application Developer Toolkit for HP	1.5	COTS									
			DCE Application Developer Toolkit for HP	1.7						N/A	Current
DCE Application Developer Toolkit for	1.2.2a	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
SGI											
			DCE Application Developer Toolkit for SGI	x.x				X	X	N/A	Current
DCE Application Developer Toolkit for Sun	1.1	COTS									
			DCE Application Developer Toolkit for Sun	3.1		X	X			N/A	Current
DCE Cell Manager (host agent-client)	1.6.2	COTS									
			DCE Cell Manager (host agent-client)	1.7	N/A	X				N/A	Current
			IMAN Client for OSF DCE 1.2.2	2.x		X		n/a	n/a	N/A	N/A
DCE Cell Manager (management agent-server)	1.6.2	COTS									
			DCE Cell Manager (management agent-server)	1.7		X				N/A	Current
			IMAN Server for OSF DCE 1.2.2	2.x		X		n/a	n/a	N/A	N/A

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
DCE Client for HP	1.5	COTS									
			DCE Client for HP	1.7						N/A	Current
DCE Client for SGI	1.2.2a	COTS									
			DCE Client for SGI	1.2.2c					X	N/A	Current
DCE Client for Solaris	1.1	COTS									
			DCE Client for Sun	3.1		X	X			N/A	Current
DCE Name Server	1.1	COTS									
			DCE Name Server	3.1		X	X			N/A	Current
DCE Security Server	1.1	COTS									
			DCE Security Server	3.1		X	X			N/A	Current
DDTS	4.1	COTS									
			DDTS	4.5.1	X	X				N/A	Current
			DDTS	4.6	X	X	X			N/A	Current
Disksuite	4.1	Freeware									
			Disksuite	4.2		X				N/A	Current
			Disksuite	4.2.1		X	X			N/A	Current
Exabyte Driver	1.3	Freeware									
			Exabyte Drive	n/a	?	?	?			N/A	N/A
FIND_DDOS	3.3	Freeware									
			FIND_DDOS	4.1	X	X	?			N/A	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
FLEXIm	6.1	COTS									
			FLEXIm	6.1.1	X	X		X	X	N/A	Current
			FLEXIm	7.0e		X	X			N/A	Current
			FLEXIm	7.1e		X	X	?	?	N/A	Current
Forcheck	12.3	COTS									
			Forcheck	12.74	X	X	X			N/A	Current
			Forcheck	12.8	X	X	X			N/A	3Q2000 ?
			Forcheck	13	X	X	X			N/A	1Q2001 ?
Fore Powerhub FDDI Switch Packet Engine Runtime	pe2p-2.0.0 1998.05.06	Firmware									
			Fore Powerhub FDDI Switch Packet Engine Runtime	None						N/A	N/A
GhostView	1.5	Freeware									
			GhostView	None						N/A	N/A
GNU Unzip	1.2.4	Freeware									
			GNU Unzip	None						N/A	N/A
GNU Zip	1.2.4	Freeware									
			GNU Zip	None						N/A	N/A
HiPPI Switch EEMM	2.05	Firmware									
			HiPPI Switch	3.05						N/A	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			EEMM								
HiPPI Switch HW/Firmware SCC	2.23	Firmware									
			HiPPI Switch HW Firmware SCC	2.31						N/A	Current
HP Softbench for C++ for 10.20	5.25	COTS									
			HP Softbench for C++	6.6						N/A	Current
HP-UX	10.2	COTS									
			HP-UX for DAACs	11						ASE 12.0	Current
			HP-UX for DAACs	12						TBD	06/2002 est.
IDL for SGI	5.3	COTS									
			IDL for UNIX	5.4		X	X	X	X	N/A	Current
			IDL for UNIX	6		X	X	X	X	N/A	2Q2001
IDL for Solaris	5.1	COTS									
			IDL for UNIX	5.3		X		X	X	N/A	Current
			IDL for UNIX	5.4		X	X	X	X	N/A	Current
			IDL for UNIX	6		X	X	X	X	N/A	2Q2001
IMSL CNL for DAAC IRIX	3.01	COTS									
			IMSL CNL for IRIX	4				X	X	N/A	Current
IMSL F90 for DAAC IRIX	4.01	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			IMSL F90 for IRIX	n/a						N/A	None
IQ Report Writer	5.5.01	COTS									
			IQ (Vision Query)	5.5.10	X	X	?			Not certified for 11.9.2/12; versions will be supported if most current release, otherwise upgrade may be needed.	Current
			IQ (Vision Query)	6	X	X	X			Not certified for 11.9.2/12; versions will be supported if most current release, otherwise upgrade may be needed.	Mar. 2001
IRIX	6.5.6m	COTS									
			IRIX	6.5.10f						for 6.5: ASE 11.5.1; 11.9.3; 12.5/OC 12	Current
			IRIX	6.5.11f						for 6.5: ASE 11.5.1; 11.9.3; 12.5/OC 12	03/01/2001
			IRIX	6.5.12f						for 6.5: ASE 11.5.1; 11.9.3; 12.5/OC 12	06/01/2001
			IRIX	6.5.7m						for 6.5: ASE 11.5.1; 11.9.3; 12.5/OC 12	Current
			IRIX	6.5.8m						for 6.5: ASE 11.5.1; 11.9.3; 12.5/OC 12	Current
			IRIX	6.5.9m					X	for 6.5: ASE 11.5.1; 11.9.3; 12.5/OC 12	Current
Java Runtime Environment	1.2.1	Freeware									
			Java Runtime	1.2.2	X	X	X			N/A	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			Environment								
			Java Runtime Environment	1.3		X	X			N/A	Current
JetAdmin for PC	2.3.3	Freeware									
			JetAdmin (Web JetAdmin) for PC	6.2						N/A	Current
			JetAdmin for PC	3.42						N/A	Current
JetAdmin for Sun	d.02.10	Freeware (HP)									
			JetAdmin (WebJetAdmin) for Solaris	Web JetAdmin 6.1	X	X				N/A	Current
			JetAdmin (WebJetAdmin) for Solaris	Web JetAdmin 6.2		X				N/A	Current
			JetAdmin for Solaris	d.06.21	X					N/A	Current
Legato Networker Client	5.5.1	COTS									
			Legato Networker Client	5.5.3	X	X	X	X	X	N/A	Current Solaris/HP-none certif for IRIX
			Legato Networker Client	6	X	X	X	X	X	N/A	Current
Legato Networker Server	5.5.1	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			Legato Networker Server	5.5.3	X	X	X	X	X	N/A	Current
			Legato Networker Server	6	X	X	X	X	X	N/A	Current
Microsoft Office Professional	Office 97	COTS									
			Microsoft Office Professional	Win2000 (beta)						N/A	Current
			Microsoft Office Professional	Win98						N/A	Current
NCDware	4.1.1 41	COTS									
			NCDWare	5.1	X	X	X			N/A	Current
Netscape Communicator	4.7	COTS									
			Netscape Communicator	4.75	X	X	X			N/A	Current
			Netscape Communicator	6	X	X	X	X	X	N/A	Current for Windows
Netscape Enterprise Server	3.6	COTS									
			Netscape Enterprise Server	3.6.3	X	X				N/A	Current
			Netscape Enterprise Server	4.1SP2		X	X			N/A	Current
Nortel Networks FDDI	2.3.3	Firmware									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
Concentrator Firmware											
			Nortel Networks FDDI Concentrator Firmware	None						N/A	Current
OpenView Network Node Manager	6	COTS									
			OpenView Network Node Manager	6.1	X	X	X			N/A	Current
			OpenView Network Node Manager	6.2 ?	?	?	?			N/A	01/31/2001 ?
Percon PT-2000 Portable Application Library	3.4	Firmware									
			Percon PT-2000 Portable Application Library	4.1.9						N/A	Current
PERL	5.005-03	Freeware									
			PERL	5.004	X	X	X	X	X	N/A	Current
Purify for HP	4.1	COTS									
			Purify for Sun	5.1	X	X				N/A	Current
			Purify for Sun	5.2	X	X				N/A	Current
			Purify for Sun/SGI	5.3	X	X	X	X	X	N/A	12/31/2000

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
Purify for SGI	4.5	COTS									
			Purify for SGI	4.6				X	X	N/A	12/31/2000
			Purify for Sun/SGI	5.3	X	X	X	X	X	N/A	12/31/2000
Purify for Sun	4.5.1	COTS									
			Purify for Sun	5.1	X	X				N/A	Current
			Purify for Sun	5.2	X	X				N/A	Current
			Purify for Sun/SGI	5.3	X	X	X	X	X	N/A	12/31/2000
ReelRobot SRI	2.3.3.1	COTS									
			REELRobot SRI	2.3.3.3	X	?	?			N/A	Current
Remedy ARS Client	3.2.1	COTS									
			Remedy ARS Client	4.0.1	X					N/A	Current
			Remedy ARS Client	4.0.2	X					N/A	Current
			Remedy ARS Client	4.0.3	X	X				N/A	Current
			Remedy ARS Client	4.5		X	X			N/A	Current
			Remedy ARS Client	4.5.1		X	X			N/A	Current
			Remedy ARS Client	x.x		TBD	TBD			N/A	est. 7/2001
Remedy ARS Server	3.2.1	COTS									
			Remedy ARS Server	4.0.1	X					Sybase 11.5 certified; 11.5.1 not certified, but will	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
										be supported	
			Remedy ARS Server	4.0.2	X	X				Sybase 11.5 certified; 11.5.1 not certified, but will be supported	Current
			Remedy ARS Server	4.0.3	X	X				11.5 or later on HP-UX 10.20&11/ Support for version 12.0 confirmed 3/00, but not in production use	Current
			Remedy ARS Server	4.5		X	X			ASE 11.9.2 & 12.0 on HP-UX 11.x; Solaris 2.6/7/8	Current.
			Remedy ARS Server	4.5.1		X	X			ASE 11.9.2 & 12.0 on HP-UX 11.x; Solaris 2.6/7/8	Current
			Remedy ARS Server	x.x	X					unknown	est. 7/2001
SATAN	1.1.1	Freeware									
			SATAN	None						N/A	Current
SGI C Compiler	7.2.1.3m	COTS									
			SGI C Compiler	7.3.1.1m				X	X	N/A	Current
			SGI C Compiler	7.3.1.2m				X	X	N/A	Current
SGI C++ Compiler	7.2.1.3m	COTS									
			SGI C++ Compiler	7.3.1.1m				X	X	N/A	Current
			SGI C++ Compiler	7.3.1.2m				X	X	N/A	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
SGI FC/THOR RAID Flare Code	2.04.30	Firmware									
			SGI FC/THOR RAID Flare Code	x.x.x						N/A	No announced availability date
SGI FC/THOR RAID PROM	4.26	Firmware									
			SGI FC/THOR RAID PROM	x.x						N/A	No announced availability date
SGI Fortran 77 Compiler	7.2.1.3m	COTS									
			SGI Fortran 77 Compiler	7.3.1.1m				X	X	N/A	Current
			SGI Fortran 77 Compiler	7.3.1.2m				X	X	N/A	Current
SGI Fortran 90 Compiler	7.2.1.3m	COTS									
			SGI Fortran 90 Compiler	7.3.1.1m				X	X	N/A	Current
			SGI Fortran 90 Compiler	7.3.1.2m				X	X	N/A	Current
SGI HiPPI SW	3.3.1	COTS									
			SGI HiPPI SW	4					X	N/A	No announced

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
											availability date
SGI ProDev Workshop	2.7	COTS									
			SGI ProDev Workshop	2.8				X	X	N/A	Current
SGI SCSI RAID Driver	3.3	COTS									
			SGI RAID Driver	x.x				X	X	N/A	No announced availability date
SGI SCSI RAID FlareCode	9.56.03	Firmware									
			SGI SCSI RAID Controller Flare Code	x.x.x				X	X	N/A	No announced availability date
SGI SCSI RAID PROM	1.73	Firmware									
			SGI SCSI RAID PROM	x.x						N/A	No announced availability date
Solaris	2.5.1	COTS									
			Solaris	10						TBD	est. 03/2004
			Solaris	11						TBD	est. 03/2006
			Solaris	7		X				11.5.1/11.9.2/3 & 12	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			Solaris	8			X			11.5.1/11.9.2/3 & 12	Current
			Solaris	9						TBD	est. 03/2002
Solaris (for ACSLS)	2.6	COTS									
			Solaris	7		X				11.5.1/11.9.2/3 & 12	Current
			Solaris	8			X			11.5.1/11.9.2/3 & 12	Current
			Solaris	9						TBD	est. 03/2002
SPARCompiler C	4.2	COTS									
			SPARCompiler C	5	X	X	X			N/A	Current
			SPARCompiler C	5.1p1		X	X			N/A	Current
			SPARCompiler C	6		X	X			N/A	Current
SPARCompiler C++	4.2	COTS									
			SPARCompiler C++	5	X	X	X			N/A	Current
			SPARCompiler C++	5.1p1		X	X			N/A	Current
			SPARCompiler C++	6		X	X			N/A	Current
SPARCompiler Fortran 77	4.2	COTS									
			SPARCompiler F77	5	X	X	X			N/A	Current
			SPARCompiler F77	5.1p1		X	X			N/A	Current
			SPARCompiler	6		X	X			N/A	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			F77								
SQR (BRIO report)	4.3.4	COTS									
			SQR Workbench (Brio.Report)	6.2	X	X	X			OC is Primary Interface: OpenClient 11.1.1; 12 ?/ASE 11.5.1; 11.9.2; 12/Need to verify Sybase OC versions	12/31/2000
SQS (Spatial Query Server)	3.2.2	COTS									
			SQS (Spatial Query Server)	3.4				X	X	Product mgr certified 64-bit ASE 11.9.3 & 32-bit OC 12 OK; OpenClient 11.1.1/OpenClient 12 (backward compatibility)/OpenClient 11.1.1/12; SQS 3.x will support all ASE 11 versions/OC 12	11/01/2000
ssh secure shell commercial (PC)	4	COTS									
			ssh secure shell commercial PC Level 1	None						N/A	No announced availability
ssh secure shell commercial (UNIX) Level 1	1.3.7	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			ssh secure shell commercial UNIX Level 1	None						N/A	No announced availability
ssh secure shell commercial (UNIX) Level 2	2.0.13	COTS									
			ssh secure shell commercial UNIX Level 2	None				X	X	N/A	No announced availability
STK SCSI RAID Flare Code	9.55.1	Firmware									
			STK SCSI RAID Flare Code	?						N/A	No announced availability
StorEdge Volume Manager	2.6	COTS									
			StorEdge Volume Manager	3.0.2	X	X				N/A	Current
			StorEdge Volume Manager	3.0.3	X	X	X			N/A	Current
			StorEdge Volume Manager	3.0.4	X	X	X			N/A	Current
			StorEdge Volume Manager	3.1		X	X			N/A	Current
Sybase ASE	11.5.1	COTS									
			Sybase Adaptive	11.9.3 for SGI	X	?	X	X		N/A see OS Sybase	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			Server				(EOL?)			entries	
			Sybase Adaptive Server	12		X	X	X	X	OpenClient 11.1.1 except no HA reconnection; 12.0 recommended; Replication Server 11.5.1/12.0; Central viewer 3.2; Solaris 7 patches 106541-03/106327-05/106300-06; requires ASE plug-in for Central 12.	Current for Solaris/HP/NA for SGI (12.5 first release)/6 mos. from 4/3/2000 est. for Solaris 8 availability
			Sybase Adaptive Server	12.5		?	X	X	X	OpenClient 11.1.1 except no HA; reconnection; 12.0 recommended; Replication Server 11.5.1/12.0; Central viewer 3.2; Solaris 7 patches 106541-03/106327-05/106300-06; Solaris 8; HP-UX 11: IRIX 6.5	Beta 9/2000; GA 1Q2001
			Sybase Replication Server/Manager	11.9.2	X	X	X			ASE 11.9.2; 12	Current
Sybase ASE SQL Server Monitor	11.5.1	COTS									
			Sybase SQL Server Monitor	11.9.3		X	X (EOL?)	X	X	requires same version as ASE	Current
			Sybase SQL Server Monitor	12		X	X	X	X	requires same version as ASE	Current
Sybase	3.0.0	COTS									

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
Central											
			Sybase Central	x.x						Bundled with ASE version release	?
Sybase Open Client/C for HP	11.1.1	COTS									
			Sybase OpenClient/C for HP	12						ASE versions 11.5.1 through 12.5	Current
Sybase Open Client/C for SGI	12.0.0	COTS									
			Sybase OpenClient/C for SGI	12.5				X	X	? through 12.5	1Q2001
Sybase Open Client/C for Sun	11.1.1	COTS									
			Sybase OpenClient/C for Sun	12	X	X	X			ASE versions 11.5.1 through 12.5	Current
Sybase Replication Server/Manager	11.5.1	COTS									
			Sybase Replication Server/Manager	11.9.3		X	X			ASE 11.9.3; 12	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
			Sybase Replication Server/Manager	12		X	X			ASE 12	Current
TCL/Tk	8.0 patch 4	Freeware									
			TCL/tk	8.3.2	X	X	X	X	X	N/A	Current
			TCL/tk	8.4a2	X	X	X	X	X	N/A	Current
			TCL/tk	9	X	X	X	X	X	N/A	4Q2001 ?
TCPWrappers	7.6	Freeware									
			TCP Wrappers	None	X	X	X	X	X	N/A	n/a
Tivoli Client	3.6	COTS									
			Tivoli Client	3.7		X				N/A	Current
			Tivoli Client	4		?	X			Support for ASE 12 expected	2001
Tivoli Server	3.6	COTS									
			Tivoli Server	3.7		X	X			ASE 11.5.1 & 11.9.2	Current
			Tivoli Server	4		?	X			Support for ASE 12 expected	2001
Tripwire for SGI	1.3	Freeware									
			Tripwire (commercial)	2.2.1		X	X	X	X	N/A	Current
Tripwire for Solaris/HP	1.2	Freeware									
			Tripwire (commercial)	2.2.1		X	X	X	X	N/A	Current
			Tripwire (freeware)	1.3	X	X	X	X	X	N/A	Current

Product	Base line Ver.	Type	Future Product	Future Version	Runs on Solaris 2.5.1	Runs on Solaris 7	Runs on Solaris 8	Runs on IRIX 6_5_6m	Runs on IRIX 6_5_9m	Sybase Depend.	Availability Date
Visual Workshop for C++	3	COTS									
			Visual Workshop C++	5	X	X				N/A	Current
			Visual Workshop C++	5.1p1		X	X			N/A	Current
			Visual Workshop C++	6		X	X			N/A	Current
			Visual Workshop C++	6.1		X	X			N/A	TBD
XRP Accell	2.0.7.2.0	COTS									
			XRP Accell (ELS)	6.5AC		X	X			N/A	Current
XRP-II	3.1.3	COTS									
			XRP-II	x.x	?	?	?			N/A	N/A

