CSOC-WFF-PLAN-001540
Original

Consolidated Space Operations Contract

Transition Plan for the Standard Autonomous File Server (SAFS)

August 28, 2000

Effective: August 28, 2000

Contract NAS9-98100

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DCN Control Sheet

DCN Number	Date/Time Group (Electronic DCN Only)	Month/Year	Section(s) Affected	Initials

Preface

The purpose of this document is to establish guidelines and responsibilities for the orderly hand-over of the SAFS from NASA CODE 584 to CSOC operations, maintenance and sustaining engineering support.

This document is controlled by the Wallops Configuration Review Board. This document will be changed by Documentation Change Notice (DCN) or complete revision. Proposed changes to this document must be submitted to the Wallops Configuration Manager along with supportive material justifying the proposed change. Comments or questions concerning this document and proposed changes shall be addressed to:

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Transition Plan for the Standard Autonomous File Server (SAFS)

1. Executive Summary

The Standard Autonomous File Server system is used as an autonomous intermediary between ground stations and data customers who have requirements that cannot be managed by media distribution. Automated file transfer capability is provided by SAFS at Ground Network sites in Svalbard, Norway (SGS), Poker Flat, Alaska (AGS), Wallops Ground Station, Virginia (WGS), and McMurdo, Antarctica (MGS). A central SAFS responsible for interfacing system end-users is installed at Goddard Space Flight Center, Maryland (GSFC). CSOC is also responsible for sustaining engineering for SAFS located at the University of Alaska SAR Facility in Fairbanks, Alaska (ASF).

SAFS is operational and is currently supporting the QuikSCAT and EO-1 missions. Future missions requesting SAFS support include ADEOS II, SAGE III, ICESat, Radarsat, and Gravity Probe B.

NASA will complete the remaining developmental engineering tasks, train CSOC personnel and transition all SAFS sustaining work to CSOC as specified in the Transition Agreement.

2. Overview

2.1 System Background

The Standard Autonomous File Server (SAFS) system was developed by NASA Code 584 in response to an action from an Advanced Earth Observing Satellite (ADEOS) II working group. It was identified as a launch critical system for the QuikSCAT mission and SAFS has operated continuously in support of QuikSCAT since June 1999 at AGS, MGS, SGS, WGS, and GSFC.

The SAFS Team consists of Susan K. Semancik (Code 584), project lead, and Annette M. Conger (Computer Sciences Corporation), developer.

2.2 Purpose

The purpose of the System Transition Plan is to establish guidelines and responsibilities for the orderly hand-over of the SAFS from NASA CODE 584 to CSOC operations, maintenance and sustaining engineering support.

2.3 Scope

SAFS high-level requirements include the following; functional requirements are listed in the SAFS Design and Functional Specification Document, Version 1.0, dated January 7, 1998.

a. SAFS shall receive data files from the telemetry processor(s) within the ground stations.

b. SAFS shall manage the data files transferred from the telemetry processor(s).

c. SAFS shall handle data file dissemination.

d. SAFS shall provide a file transfer verification method.

e. SAFS shall perform file management on the processed files.

Station SAFS are installed at the GN stations AGS, MGS, SGS, WGS, and ASF at the Alaska SAR Facility. The Central SAFS is installed at GSFC, Building 14; Amy Taylor (Code 584) is the property manager for Central SAFS equipment. Station SAFS receive data files from the telemetry processor during automated software takedown after a pass. The station SAFS then pushes the data files to the Central SAFS at available line rate. When project requirements are defined, project customers determine whether they will pull their files or receive a pushed file from the Central SAFS. The SAFS at AGS, MGS, SGS, and WGS are on the NASA Closed IONet, behind a firewall. The Central SAFS and the ASF station SAFS have open network accessibility.

System components at AGS, SGS, WGS, and GSFC are operational and currently supporting the QuikSCAT mission and EO-1 pre-launch testing. The MGS SAFS is installed and tested, and is supporting QuikSCAT on an as needed basis. ASF installation is complete and configuration is in progress and will be completed by September, 2000. Future missions requesting SAFS support include ADEOS II, SAGE III, ICESat and Gravity Probe B.

2.3.1 Current Hardware Configurations

2.3.1.1 Ground Station SAFS (AGS, MGS, SGS, WGS)

a. DataDirect Networks EV-1000 RAID drive system.

b. SGI Origin 200 server(s) with one Ethernet card (WGS - two Ethernet cards).

c. Industrial Computer Source keyboard/monitor/touchpad unit.

2.3.1.2 Central SAFS (GSFC)

a. DataDirect Networks EV-1000 RAID drive system.

b. SGI Origin 2000 server with two Ethernet cards.

c. Industrial Computer Source keyboard/monitor/touchpad unit.

2.3.1.3 Non-Ground Station SAFS (ASF)

a. DataDirect Networks EV-1000 RAID drive system.

b. SGI Origin 200 server(s) with four Fast Ethernet cards.

c. SGI Expansion Box(es).

d. Industrial Computer Source keyboard/monitor/touchpad unit.

2.3.2 Current Software Configurations (all SAFS Systems)

a. FASTCopy 2.5 software from Softlink, Inc.

b. IRIX 6.5 operating system.

c. Custom shell scripts.

d. Custom C programs.

3. State of the Candidate System

3.1 System Review Status

This section includes a history of the system reviews that have been conducted and the review results. Refer to Table 1 for a complete list of reviews and results. All of the reviews listed were for the EOS Polar Ground Stations (EPGS) project or for flight project missions that use SAFS, except for the SAFS Design Review.

Table 1 SAFS Reviews

Review	Date	Document	Status
QuikSCAT Ground System Test Readiness Review	5/6/98	http://www.wff.nasa.gov/~websafs/	Completed
EPGS Readiness Review	8/20/98	http://www.wff.nasa.gov/~websafs/	Completed
EPGS Operations Readiness Review	2/26/99	http://www.wff.nasa.gov/~websafs/	Completed
QuikSCAT Delta Operations Readiness Review	4/8/99	http://www.wff.nasa.gov/~websafs/	Completed
QuikSCAT Mission Readiness Review	4/22/99	http://www.wff.nasa.gov/~websafs/	Completed
SAFS Design Review for Multiple Project Support	7/13/99	http://www.wff.nasa.gov/~websafs/	Completed

3.2 Review Item Disposition Status

There is one open RID and one closed RID. Both are described below.

3.2.1 EO-1 AI #21 (RID)

Provide information on GN contingency procedures for a SAFS failure.

Due: ASAP

Status: Contingency procedures will be determined by CSOC and the SAFS team during SAFS/CSOC transition period.

3.2.2 EPGSRB-12 (RID)

Test data files appearing in operational SAFS data flow.

Due: 1/24/00

Status: All station SAFS have a test directory (/raid1/safs/test) that will accept files from any active project's telemetry processors, but does not distribute them to the Central SAFS. Hence, these test files will never appear in the operational SAFS data flow. The files in this test directory are automatically deleted after 24 hours. Within 24-hours of a transfer, users can FTP to this directory to see the transfer status, and to check the file size and name. This test directory is currently being used by the ADEOS II data stripper which is being tested at Wallops. Operations personnel should create a test setup that either uses this test directory, or should turn off transfer to the SAFS in their test setups.

Closed: 14 December 1999 by originator, Steve Gunter/JPL. As the initiator of the RID, I consider her reply to be fully acceptable. SAFS has provided the means to do testing without interfering with the operational flow. It is up to the station personnel to follow the correct procedures and utilize the test capability, correctly.

3.3 Configuration Item List

The Configuration Items List (CIL) identifies each configured item by name, type and version number. Configured items include documents that describe requirements, design and use of the SAFS software, including COTS products, utilities and tools, the software itself and the hardware and peripherals that constitute the maintenance environment.

3.3.1 Software

SAFS software consists of COTS operating system and file transfer program as well as custom script files and C applications. Refer to Appendix B for a complete list of SAFS software.

3.3.2 Hardware

Appendix C provides a list of all hardware needed to operate and maintain the SAFS. Wallops Operations and Sustaining Engineering will support maintenance efforts and handle critical problems. Each hardware component will be identified as either government furnished equipment (GFE), CSOC equipment or third party equipment.

3.3.3 Documentation

Appendix D provides a list of documents required to operate and perform maintenance on the SAFS. The Production Operations representative(s) of the CSOC transition team shall verify that the specified documents have been placed in the CSOC Configuration Management Library.

3.3.4 Change Request Status

SAFS configuration change requests (CCR) are managed by the Ground Network (GN) Sustaining Engineering Review Board (SERB). Refer to Appendix E for a list of all SAFS CCRs.

3.4 Training

Susan Semancik and Annette Conger (the SAFS Team) will provide training to CSOC personnel during a period of six months ending on 15 June 2000. By the end of the training period, all operations, maintenance, and sustaining engineering tasks will be performed by CSOC.

Training will cover tasks within the following operations, maintenance, and sustaining engineering areas:

a. Launch and test support.

b. System troubleshooting.

c. System administration.

d. Installation of software upgrades.

e. Hardware maintenance.

Training will be delivered opportunistically. The SAFS Team will notify CSOC personnel identified for training whenever SAFS tasks are pending. CSOC personnel will be trained to perform each of the requisite tasks by working with the SAFS Team in accordance with the Transition Agreement. This training will consist of a combination of instructional materials and hands-on training, when possible. As CSOC personnel are trained, the SAFS Team will gradually turn operations, maintenance, and sustaining engineering tasks over to CSOC. In addition, the SAFS Team is developing a CD-ROM that can be used for self-study or OJT of personnel at the remote sites.

3.5 External Interfaces

External interfaces are exercised and verified through mission-specific pre-launch test plans and against the Project Interface Document between SAFS and a project. This document details file delivery, file names, e-mail formats, and other customer-specific parameters and preferences. Once the document is in place, the interface is implemented in SAFS script files for each customer. The Project Interface Document is online at http://www.wff.nasa.gov/~websafs/.

3.6 Risk Assessment

This section shall be used to identify liens against the system, evaluation of risks and mitigation efforts to be incorporated in the transition.

3.6.1 Liens

There are two open liens against the SAFS, neither of which jeopardize the ability of the system (or the GN) to meet requirements. These two liens are discussed in the following paragraphs.

3.6.1.1 FASTCopy Error

FASTCopy has a recurring error that causes the server to hang up after software has run for a long duration. Restarting the server clears the problem. The FASTCopy vendor is working on a fix for this problem. Temporary workarounds are in place to monitor the suspected condition that causes the problem.

3.6.1.2 Timeslave Problem

All ground station SAFS experience a timeslave problem. Dwayne Turley/CSC and Kirt Dankmyer/GHG are working with Silicon Graphics, Inc. on the problem. This problem will be fixed with the scheduled hardware upgrade.

3.6.2 Spares

Sparing is in accordance with the Earth Observing System Polar Ground Stations Project Initial Spares Provisioning Plan, 452-SPP-EPGS. All spares have been received or are on order.

3.6.3 Staffing

The staffing profile for the remainder of the contract is based on the following premises:

a. The SAFS will transition to CSOC Operations in the beginning of the second half of CY02.

b. The SAFS is used for automated file transfer of downlink data from the 11-Meter sites to the users who can not take the data in real-time. Therefore, it is expected that as new missions come on line some will utilize the SAFS throughout the length of the contract.

Table 2 Staffing by Contract Year

Contract Year	CY02 FTE	CY03	CY04	CY05	CY06	CY07	CY08	CY09	CY10
Operations	.125	.25	.25	.25	.25	.25	.25	.25	.25
Maintenance	.125	.25	.25	.25	.25	.25	.25	.25	.25
Sustaining Engineering	.25	.5	.5	.5	.5	.5	.5	.5	.5
Total	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

3.6.4 Maintenance Contracts

The cost estimate for the maintenance contracts for the remainder of the CSOC life cycle is based on the following premises:

a. The entire cost of the maintenance contracts is in the contract year when it falls due and is not prorated over the overlapping contract years they are in place.

b. CSOC will continue to procure the applicable maintenance contracts for AGS, MGS, WGS, GSFC (Central SAFS), and the CSOC SAFS Development Lab at WFF.

c. There are three separate maintenance contracts.

1. RAID Array – Includes toll free technical support, cross-shipping of parts, and on-site (excluding MGS) service support. Maintenance contract in place expires 10/31/00.

2. SGI Workstations – Includes software, operating system, and documentation updates, hardware parts replacement/exchange, on-site support as needed,

technical telephone support, and access to technical Web support. Maintenance contracts in place expire 2/28/03.

3. FASTCopy – Includes software upgrades and documentation and technical support by phone, fax, and e-mail. Contracts in place expire 11/4/00.

Table 3 Maintenance Contract Cost by Contract Year

Contract Year	CY02	CY03	CY04	CY05	CY06	CY07	CY08	CY09	CY10
RAID Array	$34K	$34K	$34K	$34K	$34K	$34K	$34K	$34K	$34K
SGI Workstations				$23K	$23K	$23K	$23K	$23K	$23K
FASTCopy		$6K	$6K	$6K	$6K	$6K	$6K	$6K	$6K
Total	$34K	$40K	$40K	$63K	$63K	$63K	$63K	$63K	$63K

3.6.5 Acceptance Testing

SAFS is a currently operational system and does not require additional acceptance testing or an independent Operational Readiness Review. Both items were successfully accomplished in conjunction with the EPGN/QuikSCAT ORR.

3.6.6 Security

Information regarding the latest risk assessment on the SAFS can be found in the following documents:

a. The EOSDIS IV&V Network Security Assessment of the EPGS and CSAFS supporting the QuikSCAT Mission, Goddard Space Flight Center, 14 May, 1999.

b. Automated Wallops orbital Tracking Station Ground Network Project, Code 452 Information Technology System Contingency Plan, CSOC-WLPS-SEC-000576.

c. Wallops Flight Facility AWOTS/WOITS Major Application Security Plan, CSOC-WLPS-SEC-000577.

Appendix A. Abbreviations and Acronyms

Acronym	Definition
AGS	Alaska Ground Station
ASF	Alaska SAR Facility
CCR	Configuration Change Request
CM	Configuration Management
COTS	Commercial-Off-The-Shelf
CSC	Computer Sciences Corporation
CSOC	Consolidated Space Operations Contract
EOSDIS	Earth Observing System Data and Information System
FTE	Full-Time Equivalent
GHG	GHG Corporation
GN	Ground Network
GSFC	Goddard Space Flight Center
IONet	Internet Protocol Operations Network
IV&V	Independent Verification and Validation
JPL	Jet Propulsion Laboratory
MGS	McMurdo Ground Station
NASA	National Aeronautics and Space Administration
RID	Review Item Disposition
SAFS	Standard Autonomous File Server
SAR	Synthetic Aperture Radar
SGI	Silicon Graphics, Inc.
SGS	Svalbard Ground Station
WFF	Wallops Flight Facility
WGS	Wallops Ground Station

Appendix B. Software Items

Table B-1 - Central SAFS Software

Software Type	File Name	Version
Operating System	IRIX	6.5
COTS	FastCOPY	2.5
Shell scripts		
Control	Control	1.0
Projects	ad2	1.0
	qst	1.0
	eo1	1.0
	sm3	1.0
C Programs		
	mrpt_make.c	1.0
	c_rpt0.c	1.0
	c_rpt2.c	1.0
	c_rpt4.c	1.0
	ftrans.c	1.0
	mdate-make.c	1.0
	sched_make.c	1.0

Table B-2 - AGS SAFS Software

Software Type	File Name	Version
Operating System	IRIX	6.5
COTS	FastCOPY	2.5
Shell scripts		
Control	Control	1.0
Projects	qst	1.0
	eo1	1.0
C Programs		
	msgbuf.c	1.0

Table B-3 - MGS SAFS Software

Software Type	File Name	Version
Operating System	IRIX	6.5
COTS	FastCOPY	2.5
Shell scripts		
Control	Control	1.0
Projects	qst	1.0
	eo1	1.0
C Programs		
	msgbuf.c	1.0

Table B-4 - SGS SAFS Software

Software Type	File Name	Version
Operating System	IRIX	6.5
COTS	FastCOPY	2.5
Shell scripts		
Control	Control	1.0
Projects	qst	1.0
	eo1	1.0
C Programs		
	msgbuf.c	1.0

Table B-5 - WGS SAFS Software

Software Type	File Name	Version
Operating System	IRIX	6.5
COTS	FastCOPY	2.5
Shell Scripts		
Control	Control	1.0
Projects	ad2	1.0
	qst	1.0
	eo1	1.0
	sm3	1.0
C Programs		
	msgbuf.c	1.0

Table B-6 - ASF SAFS Software

Software Type	File Name	Version
Operating System	IRIX	6.5
COTS	FastCOPY	2.5
Shell Scripts		
Control	Control	1.0
Projects	ad2	1.0
	qst	1.0
	rad	1.0
C Programs		
	msgbuf.c	1.0

Appendix C. Hardware Items

Location	Descripton	Serial Numbers	Note	Comments
Central System at GSFC – Bldg 14, Rm S181, Greenbelt, MD				
	SGI Origin 2000 Server	K0011065		1820785
	EV-1000 Chassis	3E9T111114		1945165
	Controller			
	E-8	3E9H111173		1945169
		3E9H111135		1945168
		3E9H111148		1945170
	9.1GB Drives	3D9M117812		1945171
Stephen Dudash,		3D9M117720		1945185
Property manager		3D9M117729		1945190
Voice: 660757		3D9M117725		1945186
FAX: 661687		3D9M117772		1945175
		3D9M117719		1945179
Transferred to		3D9M117811		1945181
Amy Taylor		3D9M117749		1945180
584.W, x 1322		3D9M117775		1945182
		3D9M117748		1945173
		3D9M117703		1945174
		3D9M117714		1945183
		3D9M117704		1945184
		~~3D9M117849~~	9	RMA # 739628
		3F9E114450	9	1626442
		3D9M117724		1945176
		3D9M117746		1945187
		3D9M117740		1945188
		3D9M117738		1945189
		3D9M117807		1945172
	CS-1	CQV07		1945166
	Monitor D828L	84766a9UX1		1945167
	Monitor/Keyboard	~~D-3115500004~~	15	~~1944097~~ ~~C0060076~~ (CSOC)
	6700TC	D 3822903001	15	2031990 C0067396 (CSOC)

Location	Descripton	Serial Numbers	Note	Comments
Wallops Ground Station – Bldg N162, Wallops Island, VA				
C0064295	SGI Origin 200 Server	69056298		1942946
C0064297	EV-1000 Controller Chassis	3E9T000025		1944037 1000003103
	Controller blades	3E9S000023		
		3E9T000025		
C0074452	E-8	3E9H111156		2034766 (lower)
C0074453		3E9H111162		2034767 (middle)
C0074454		3E9H111165		2034768 (top)
	9.1GB Drives	~~3D9M117707~~	18	
		~~3D9M117726~~	18	
		~~3D9M117769~~	18	
		~~3D9M117770~~	18	
		~~3D9M117708~~	18	
		~~3D9M117867~~	18	
	50GB Drives	NJ9C111728	18	
		NJ9C111799	18	
		NJ9C111798	18	
		NJ9C111797	18	
		NJ9C111805	18	
		NJ9C111801	18	
		NJ9C111713	18	
		NJ9C111696	18	
		NJ9C111682	18	
		NJ9C111800	18	
		NJ9C112112	18	
		NJ9C112115	18	
C0064294	CS-1	CQV00		1942964
	Monitor D828L	84766A4K6U97		1942965
C0064296	Monitor/Keyboard	D-3115500001		1944094

Location	Descripton	Serial Numbers	Note	Comments
Alaska Ground Station – Poker Flat Research Range, Chatanika, AK				
~~C0068191~~ C0074507	SGI Origin 200 Server	~~69056233~~ 6905617B	3 19	~~1942947~~ 1942957
C0068189	EV-1000 Chassis	3E9T111115		1944035
	Controller			
C0075969	E-8	3E9H111159		Bottom
C0075960		3E9H111161		Top
C0075964		3E9H111166		Middle
	9.1GB Drives	~~3D9M117783~~	19	
		~~3D9M117843~~	19	
		~~3D9M117753~~	19	
		~~3D9M117788~~	19	
		~~3D9M117827~~	19	
		~~3D9M117852~~	19	
C0075959	50GB Drives	NJ9C112117	19	Top, slot 1
C0075961		NJ9C112123	19	Top, slot 2
C0075962		NJ9C112121	19	Top, slot 5
C0075963		NJ9C112122	19	Top, slot 6
C0075965		NJ9C111697	19	Middle, slot 1
C0075966		NJ9C111683	19	Middle, slot 2
C0075967		NJ9C111717	19	Middle, slot 5
C0075968		NJ9C111685	19	Middle, slot 6
C0075970		NJ9C111690	19	Bottom, slot 1
C0075971		NJ9C111692	19	Bottom, slot 2
C0075972		NJ9C111702	19	Bottom, slot 5
C0075973		NJ9C111684	19	Bottom, slot 6
C0068192	CS-1	CQV02		1942978
	Monitor D828L	84766A4JH597		1942981
C0068190	Monitor/Keyboard	D-3115500011		1944095

Location	Descripton	Serial Numbers	Note	Comments
Svalbard Ground Station – Longyearbyen, Norway				
(SGS is included for CM purposes only.)	SGI Origin 200	6905639F	8	1942948 C0063526
	SGI Origin 200	690561F8	5	1942949
	EV-1000 Chassis	3E9T111117		1944036
	Controller			
	E-8	3E9H111168		
		3E9H111169		
		3E9H111132		
	9.1GB Drives	3D9M117804		
		3D9M117752		
		3D9M117832		
		3D9M117758		
		3D9M117793		
		3D9M117870		
	CS-1	D72V1		1942979
	Monitor D828L	84766ABAEH		1942980
	Monitor/Keyboard	~~D-3115500009~~ Replaced by E-3295200009		1944096

Location	Descripton	Serial Numbers	Note	Comments
McMurdo Ground Station (Antarctica)				
	SGI Origin 200 Server #1	690561B3		1942983
	SGI Origin 200 Server #2	690561FC		1942982
	EV-1000 Chassis	3E9T000026		1949660
	Controller	3E9T000026		
		3E9T000026		
	E-8	3C9N117649		
		3C9N115419		
		3C9N117650		
	9.1GB Drives	3D9M117923		
		3D9M117928		
		3D9M117959		
		3D9M118009		
		3D9M117960		
		3D9M117924		
	CS-1	D72VC		1943992
	Monitor D828L	84766AB9UM 18		1943994
	Monitor/Keyboard	D-31155000013		1944092

Location	Descripton	Serial Numbers	Note	Comments
Alaska SAR Facility, Fairbanks, AK				
(ASF is included for CM purposes only.)	SGI Origin 200 Server	690D8FB8		2037185
	SGI Origin 200 Spare	6905623A	4	1942945
	SGI Origin GigaChannel Expansion box	HHN967		2037184
	SGI Origin GigaChannel Spare	GNP326	12	2033316
	EV-1000 Controller Chassis	3E9T111124		2031915
	E-8	3E9H111215		
		3C9N117533		
		~~3C9N117333~~ ~~3E9H111142~~	10/ 13	RMA# 739804 RMA# 740236
		3E9H112160	13	
	50.0 GB Drives	NJ9C111711	14	
		NJ9C111727	14	
		NJ9C111721	14	
		NJ9C111714	14	
		NJ9C111699	14	
		NJ9C111741	14	
		NJ9C111712	14	
		NJ9C111744	14	
		NJ9C111718	14	
		NJ9C111731	14	
		NJ9C111705	14	
		NJ9C111706	14	
		NJ9C111701	14	
		NJ9C111694	14	
		NJ9C111693	14	
		NJ9C111695	14	
		NJ9C111811	14	
		NJ9C111739	14	
		NJ9C111738	14	
		NJ9C111710	14	
		NJ9C111700	14	
		NJ9C111707	14	
		NJ9C111733	14	

Location	Descripton	Serial Numbers	Note	Comments
		NJ9C111734	14	
	CS-1 Monitoring PC	~~D72VC~~	11	RMA# 739828
		D72VC	11	1943993
	Monitor	~~84766ABAF 6~~	11	RMA# 739828
		84766ABAF 6	11	1943995
	Monitor/Keyboard	D-3115500008	11	1944093

Note	Date	Explanation of change
1	8/31/98	Replaced E8 3C9N117062
2	9/2/98	Replaced 9GB Drive 3D9M999188
3	12/98	Swapped with ASF system for Y2K upgrade, originally 6905623A - 1942945
4	12/98	Swapped with AGS system during Y2K upgrade, originally 69056233 - 1942947
5	1/99	Swapped for Y2K upgrade, previously server #2
6	1/99	Swapped for Y2K upgrade, previously spare server #1
7	1/99	Swapped for Y2K upgrade, previously spare server #2
8	2/99	Swapped for Y2K upgrade, previously server #1
9	4/22/99	Replaced 9GB Drive 3D9M117849/1945177, RMA#739628
10	6/16/99	Replaced E8 3C9N117333, RMA#739804
11	6/25/99	Replaced CS-1 RAID Monitoring System, RMA#739828
12	9/15/99	Added SGI GigaChannel Expansion Box to ASF system
13	11/5/99	Replaced E8 3E9H111142, RMA#740236
14	11/5/99	Upgrade, replaced all 9.1GB drives with 50GB drives
15	12/7/99	Replaced lost keyboard/monitor D-3115500004
16	11/7/99	Added 2 bays to LABSAFS as part of upgrade.
17	5/31/00	Replaced Controller 3E9S000020, RMA#740787
18	6/27/00	Upgrade, replaced all 6-9.1GB drives with 12-50GB drives
19	7/14/00	AGS Upgrade, replaced all (6) 9.1 GB drives with 12 50GB drives, swapped AGS server with SGS maintenance spare during upgrade.

Appendix D. Documents List

1. Project Documents

a. SAFS Design and Functional Specifications, Version 1.0, 1/7/98

b. QuikSCAT Ground System Test Readiness Review Presentation Slides, 5/6/98

c. QuikSCAT Delta Operations Readiness Review Slides, 4/8/99

d. QuikSCAT Mission Readiness Review Slides, 4/22/99

e. Design Review for Multiple Project Slides, 7/13/99

f. SAFS Release Notices

g. SAFS Problem Report Logs

h. SAFS CCR/AI

i. Test Results

2. SGI Server Documentation

a. IRIX Admin: Backup, Security, and Accounting

b. IRIX Admin: Disks and Filesystems

c. IRIX Admin: Networking and Mail

d. IRIX Admin: Peripheral Devices

e. IRIX Admin: Selected Reference Pages

f. IRIX Admin: Software Installation and Licensing

g. IRIX Admin: System Configuration and Operation

h. Origin200 Owner's Guide

i. Origin200 and Origin200 GIGAchannel Maintenance Guide

j. Origin200 and Origin200 GIGAchannel Owner's Guide

k. Origin2000 Deskside Owner's Guide

l. Origin2000 and Onyx2 Standard 19-Inch Rackmount Kit

m. Diskless Workstation Administration Guide

n. NIS Administration Guide

o. ONC3/NFS Administrator's Guide

p. Resource Guide - Support Services, Product Registration, Warranty (SGI)

q. Site Preparation for Origin Family and Onyx2

r. Ultra SCSI XIO Board Owner's Guide

3. DataDirect Networks Documentation

a. Megadrive EV-1000 RAID Disk Array Technical Installation & Support Guide

b. Megadrive EV-1000 RAID Disk Array User's Guide

c. Megadrive Enterprise E-8 Mass Storage System User’s Guide

4. FASTCopy Documentation (CD-ROM)

a. FASTCopy Administrator’s Guide

b. FASTCopy Developer’s Guide

c. FASTCopy Installation Guide

d. FASTCopy Monitoring Guide

e. FASTCopy Reference Guide

f. FASTCopy User’s Guide

g. FASTLogic Reference Guide

h. FASTLogic User Guide

Configuration Change Requests List

Date Requested	Cont. No.	Locations Affected	Description of change	Date Completed
10/22/98	452	ALL	Added configuration item – SAFS	10/22/98
10/23/98	128	ALL	Y2K Compliance on FASTCopy and SGI IRIX	1/15/99
2/24/99	168	WGS GSFC	Implement SAGE III (assigned 4/21, due 6/4, code changes 5/6, 1st test 5/11)	
4/14/99	176	ALL	Security Assessment Changes (assigned 4/16)	4/26/99
6/28/99	202	AGS MGS SGS WGS GSFC	Implement EO-1 (assigned 5/17, code changes 7/20-7/26, 1st test 7/26)	
7/13/99	204	WGS	100BastT card for SAFS	9/15/99
8/2/99	211	GSFC	Change QuikSCAT NOAA secondary distribution host to BOREAS Including hk1, hk2, sci job files and /etc/hosts and /etc/softlink.security files	8/31/99
8/23/99	213	All GS	QuikSCAT is increasing file sizes for hk2 and sci files – impact assessment	8/27/99
8/26/99	214	ASF WGS GSFC	Implement ADEOS II (approved 9/8/99)	
8/26/99	215	All GS	Add a “TEST” directory (approved 9/8/99, implemented 9/10/99)	9/10/99
	N/A	ASF	Implement Radarsat (Not under EPGS CM.)	
9/1/99	216	AGS MGS SGS WGS Central	FASTCopy software update (2.5/3.1) (approved 9/3/99)	9/7/99

Date Requested	Cont. No.	Locations Affected	Description of change	Date Completed
10/29/99 6/21/00	230	WGS AGS SGS MGS Central	SAFS Server and RAID drive upgrades and reconfiguration. Add a drive bay (when applicable) and add new 50 GB and additional 9 GB drives. Also adding XLV striping across 2 RAID controllers. The server upgrades include additional memory, cache and processors. (WGS completed 6/27/00)	
12/2/99	235	AGS MGS SGS WGS Central	FASTCopy software update (V2.5,U7, B 0.23)	1/28/00
5/20/99	239	ALL	Update QST to new version processing (resubmitted 1/31/00, assigned 2/10/00)	
1/21/00	240	AGS WGS	Investigate and implement an interface between the SAFS and TOTS/LEO-T as an alternative for QuikSCAT when 11 meter is busy.	
1/31/00	241	AGS MGS SGS WGS Central	Implement ICESat	
4/4/00	249	Central	Implement ERROR detection software on CSAFS (assigned 4/5/00)	4/5/00
4/24/00	253	Central	Install Secure Shell (SSH) on the Central SAFS.	5/8/00
5/100	254	AGS MGS SGS WGS	Implement a CSAFS problem notification method between the ground station SAFS and the AWOTS Master.	
6/21/00	255	Central	Add capability to receive processed QST Met data from NOAA and notify EOC with an RCN of data availability.	

CSOC-WFF-PLAN-001540

Transition Plan for the Standard Autonomous File Server (SAFS)

Original