

211-TP-007-001

# Transition Plan 6A.04 to 6A.XX (6A.05) For the ECS Project

Technical Paper

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## RESPONSIBLE AUTHOR

Royal White Jr. and Willard Selph /s/ 6/21/01  
\_\_\_\_\_  
Royal White and Willard Selph, Systems Engineering Date  
EOSDIS Core System Project

## RESPONSIBLE MANAGER

Carolyn Whitaker /s/ 6/21/01  
\_\_\_\_\_  
Carolyn Whitaker, Systems Engineering Date  
EOSDIS Core System Project

Raytheon Company  
Upper Marlboro, Maryland

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# Preface

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This document describes the 6A.04 to 6A.XX (6A.05) transition plan. The plan contained herein is applicable to all four DAACs (EDC, GSFC, LaRC, and NSIDC). This plan is based on the general approach taken in the previous custom code transitions and the 6A.XX specific information.

The custom code release levels has been finalized to 6A.04 (from) and 6A.XX (6A.05) (to). The transition plan will be updated to accommodate changes, if required. The final version of the transition plan will be presented at the 6A.XX (6A.05) DAAC Transition Exercise.

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# Abstract

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The objective of this plan is to provide a road map for the transition from the release 6A.04 to the release 6A.XX (6A.05) of ECS. This document describes the steps that will be used to transition ECS from one version to the next and provides common understanding of the transition approach, both internally and at the DAACs.

**Keywords:** Transition, Release 6A.04, Release 6A.XX (6A.05)

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## Abstract

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# 1. Introduction

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## 1.1 Identification

This document provides the transition plan of the ECS system at each of the four DAACs from the release 6A.04 to release 6A.XX (6A.05).

## 1.2 Objective

This transition plan is intended to identify the high level processes that will be used to transition ECS from the release 6A.04 to the release 6A.XX (6A.05). This document is intended to satisfy the need for a common understanding of the ECS custom software transition approach both internally and at the DAACs. This document is not intended to provide the detailed procedures that must be followed to implement the transition. That information will be provided in an Install Instruction document to be provided separately.

## 1.3 Scope

This plan describes activities for the transition of the ECS system from Release 6A.04 to Release 6A.XX (6A.05) only. This plan describes transition activities in the VATC and at GSFC, EDC, LaRC, and NSIDC DAACs. The plan describes transition only of ECS custom software components. All schedule-related information for this transition is maintained in the ECS Primavera schedule.

## 1.4 White Paper Organization

This document is organized as follows:

Section 1 describes the document objectives, scope, and document organization

Section 2 identifies reference documentation

Section 3 describes the major elements of the release 6A.XX (6A.05) transition - the new systems capabilities that are provided with the release.

Section 4 provides an overview of the transition including assumptions, transition approach.

Section 5 identifies logistical requirements

Questions regarding technical information contained within this document should be addressed to the following ECS contacts:

- Royal White, System Engineer (301) 925-1051, pager (877) 587-4331
- Willard Selph, System Engineer (301) 883-4146

- Carolyn Whitaker, System Engineer, (301) 925-0479

Questions concerning distribution or control of this document should be addressed to:

Data Management Office  
The ECS Project Office  
Raytheon Company  
1616 McCormick Drive  
Upper Marlboro, MD 20774-5301

## 2. Related Documentation

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### 2.1 Parent Documents

Parent documents are documents from which the Transition Plan's scope and content are derived.

803-RD-025	Mod 86, The ECS Restructure Proposal for Contract NAS5-60000
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
ECS 999-TR-951-024R	NAS5-60000, Delivery Schedule

### 2.2 Applicable Documents

The following documents are referenced within this Transition Plan, are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

335-CD-004	ECS COTS Deployment Plan, Volume 4
211-TP-006	Transition Plan 5B to 6A for the ECS Project, Technical Paper

### 2.3 Information Documents

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

#### 2.3.1 Information Documents Referenced

None

#### 2.3.2 Information Documents Not Referenced

None

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# 3. Release Description

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This section provides an overview of the capabilities that will be provided in the release 6A.XX (6A.05) transition. This section also provides an overview of the COTS dependency on the release 6A.XX (6A.05).

## 3.1 Overview

The Release 6A.XX (6A.05) transition event includes significant capabilities from several areas.

- Those items that have been previously identified as "Release 6A" and are included in the 6A.XX (6A.05) transition event
- Those items that have been identified as new scope but are to be included beyond the 6A.XX (6A.05) transition event.
- Other items: significant capabilities developed outside of the context of Tickets or NCRs. Note that many less significant NCR items will be included in this transition as well

This section will identify capabilities from these three categories that will be included as a part of the 6A.XX (6A.05) transition event.

Note also that some 6A items are being delivered at other events or have been deferred indefinitely. These 6A items are identified here as well for completeness.

## 3.2 Release 6A.XX (6A.05) Transition Capabilities

Capabilities (including significant NCR capabilities) associated with 6A.XX transition are described in the following sections.

### 3.2.1 Release 6A.XX (6A.05) Ticket Items

The following is a list of Release 6A Tickets. This list is based upon the 6A.XX (6A.05) tickets identified in the Verification DataBase (VDB) on May 29, 2001. The disposition of those tickets with respect to the 6A.XX transition is also noted. Those items in the table whose disposition indicates that they are included in the 6A.XX transition are described further in Section 3.2.4.

**Table 3.2.1-1. 6A.XX (6A.05) Ticket Items**

<b>Ticket ID</b>	<b>Title</b>	<b>Disposition</b>
EN_6A_01	Tape Ingest of IGS Browse data and Metadata	6A.XX (6A.05) Transition
RM_6X_01	firewall	6A.XX (6A.05) Transition

### 3.2.2 Non-6A.XX (6A.05) Items Included in the Release 6A.XX Transition

The following is a list of non-Release 6A.XX items that are to be included in the Release 6A.XX transition. These items are described further in Section 3.2.4.

<b>Ticket ID</b>	<b>Title</b>
EN_6A_01	Tape Ingest of IGS Browse data and Metadata

### 3.2.3 Other Release 6A.XX (6A.05) Items

The following is a list of other items that are to be included in the Release 6A.XX (6A.05) transition. The item is described further in Section 3.2.4.

<b>Ticket ID</b>	<b>Title</b>
RM_6X_01	Firewall

### 3.2.4 Release 6A.XX (6A.05) Transition Items Summary Description

This section provides additional descriptive information on the capabilities that are being provided in the Release 6A.XX (6A.05) event.

<p>Title: Tape Ingest of IGS Browse data and Metadata</p>		<p>Description: The International Ground Stations (IGSs) will receive and process L7 data directly from the spacecraft. The IGSs will provide to the L7 system at the EDC DAAC only browse data and metadata for the images that they have received and processed. The ECS system at the EDC DAAC ingests the IGS provided browse data and metadata, and will serve as a catalog of IGS metadata and archive for IGS browse data. Users may search the EDC DAAC catalog for the metadata about data acquired by IGSs, and retrieve the IGS browse data for those scenes. Users wishing to order this data must go directly to the IGS to retrieve the L7 products. The ECS does not provide any archive or distribution services for IGS processed L7 data.</p> <p>Metadata can be transferred to the ECS either electronically (Drop 5A) or via 8mm tape (Drop 6A). In Drop 6A, Browse data is provided via tape only and is accompanied by the associated metadata. Metadata accompanying the browse data may have been sent and ingested earlier by the IGS. In this case, the metadata that accompanies the browse data will replace the existing metadata.</p>
<p>Ticket ID: EN_6A_01</p>	<p>NCR ID: N/A</p>	
<p>Capability ID: 10023DT, 10023IN</p>	<p>Affected Subsystems: SDSRV, Ingest</p>	

Title: Firewall		Description: The ECS system configuration is partitioned into several segments, a production/ingest network segment, a user network segment, and an M&O network segment. (The number and configuration of segments is site dependent.) Currently, separation of the segments is accomplished by router configuration. In the future, the segments will have separate connections to the firewall; with inside and outside address spaces being different; and their isolation and protection will be accomplished by a combination of router and firewall configurations. All external network traffic in and out of ECS or among the different network segments will flow through the firewall, and such traffic must be specifically enabled through firewall configuration. Only authorized system administration personnel will have access to the firewall configuration.
Ticket ID: RM_6X_01	NCR ID: N/A	
Capability ID: N/A	Affected Subsystems: N/A	

**Table 3.2.1-2. Ticket Items Already Done in 6A.04**

Ticket ID	Title	Disposition
EN_6A_02	V0 Gateway Enhancements (non-science collections; result set attributes)	6A Transition
EN_6A_04	Granule Deletion	6A Transition
RM_6A_04	FTP Pull Subscription	6A Transition
RM_6A_05	Machine-to-Machine Gateway	6A Transition
RM_6A_07	EDC processing DPR Attached to a DAR	6A Transition
RM_6A_08	Landsat 7 Granule Deletion	6A Transition
RM_6A_09	Integration of the EDC Product Distribution System	6A Transition
RS_6A_05	Archive Improvements	6A Transition
RS_6A_06	Ingest of 6A Data Types	6A Transition
N/A	SDSRV Performance – Batch Insert /Update	6A Transition
N/A	SDSRV Performance – Malloc Reduction	6A Transition
N/A	SDSRV Performance – Dirty Reads	6A Transition
N/A	SDSRV Performance – Autoinspect	6A Transition
N/A	D3 Ingest	6A Transition

**Table 3.2.1-3. 6A Ticket Items Deferred to 6B**

Ticket ID	Title	Disposition
EN_6A_01	Tape Ingest of IGS Browse data and Metadata	Deferred to 6B
RS_6A_02	Compression for Distribution	Deferred to 6B
RS_6A_03	EDOS Backup	Deferred to 6B

**Table 3.2.1-4. 6A Ticket Items Removed**

<b>Ticket ID</b>	<b>Title</b>	<b>Disposition</b>
RS_6A_01	Additional Media Types (CD-ROM, DLT)	Deleted. Superseded by PDS capabilities identified in RM_5X_01 & RM_6A_09
RS_6A_04	Multi-Host Scheduling	Deleted. Superseded by PDS capabilities identified in RM_5X_01 & RM_6A_09
SL_6A_01	GSFC 24-Hour Workload Performance	Not applicable. Defines performance capabilities only.
SL_6A_02	EDC 24-Hour Workload Performance	Not applicable. Defines performance capabilities only.

### **3.3 COTS Product Dependency**

The following COTS products must be installed prior to transitioning to 6A.XX (6A.05).

#### **3.3.1 Network Time Protocol (NTP)**

This product will be used in conjunction with 6A.XX (Sockets). NTP will replace the DCE Time Server. There is no custom code required for the implementation of this COTS product. Installation instructions will be available in the NTP PSR document.

### **3.4 Other COTS Products**

The following COTS activities are taking place around the same time as 6A.04 to 6A.XX (6A.05) transition at the DAACs. These COTS are not a dependency for 6A.04 to 6A.XX (6A.05) transition and are described here for informational purposes.

#### **3.4.1 HP Migration**

The migration of COTS SW from HP to Sun machines will be happening at the same time as the 6A.04 to 6A.XX (6A.05) transition. The COTS SW products DBVision, DCE Cell Manager, Remedy, Netscape Enterprise Server, and Tivoli will have to be migrated from HP to Sun machines. Please refer to the HP Migration plan for details.

#### **3.4.2 PDS**

The COTS and custom code changes deployed as a part of PDS should not have any impact on 6A.04 to 6A.XX (6A.05) transition.

#### **3.4.3 Portus Firewall**

Implementation of Firewall will be spread throughout the next few releases. This will secure the DAAC machines from possible intrusions.

#### **3.4.4 Purify**

This tool is used to identify coding bugs as well as defining memory leaks. This upgrade will support 64 bit data.

#### **3.4.5 NCDWare**

Upgrade to the x-term software. The new version will be compatible with Solaris 8.

#### **3.4.6 Secure Shell (SSH)**

The upgrade of Secure Shell (SSH) from version 2.0.13 to version 2.4 will correct problems with host-based connections and runaway daemon processes.

#### **3.4.7 Tripwire**

This security product will be upgraded on the Sun platforms.

## 4. 6A.04 to 6A.XX (6A.05) Transition Description

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### 4.1 Transition Strategy

The ECS Transition IPT will coordinate with each DAAC to plan the on-site delivery of a release, including ECS support for installation, checkout, and transition. The transition IPT is comprised of representatives from System Engineering, Development, Test Engineering, and SOS organization.

The DAAC staff, with support from ECS Landover, will install the release, perform integration, and conduct checkout in a test mode. Transition activities will proceed from TS2 mode, then to TS1, and finally into the OPS mode. The DAAC staff will then conduct subsequent regression tests tailored for that DAAC under DAAC specific scenarios. These tests will ensure the stability and performance of the system.

The version of critical COTS products at each of the DAACs will be verified before starting the transition to ensure consistency with the baseline. The DAAC staff will be responsible for making updates to the DAAC unique configurations to avoid any problems during the transition.

### 4.2 6A.04 to 6A.XX (6A.05) Transition Overview

The 6A.04 to 6A.XX (6A.05) transition follows the same general approach as the 5B.07-to-6A.04 transition described in Transition Plan 5B to 6A for the ECS Project (211-TP-006-001).

The use of the ECSAssist allows for the entire installation process to be controlled from a single user terminal; automatically running configuration save and database dump scripts; and error handling (in conjunction with database and mkcfg scripts).

The goal of the 6A.04 to 6A.XX (6A.05) transition is to accomplish complete transition in 24 hours or less.

The general sequence of events leading up to transition will be:

- Complete the development of the transition scripts
- Integrate and test the transition procedures in the EDF
- Test the transition procedures in the VATC
- Train DAAC personnel in the VATC on transition procedures

### 4.2.1 Transition Assumptions

1. The transition is from a single baseline, i.e., if the custom software for a given mode is not starting from 6A.04, then the appropriate patches will be applied to bring the release to that level before the transition is started.
2. The transition approach is predicated upon a transition to 6A..XX(6A.05). Patches beyond this baseline will be dealt with on a case by case basis.
3. Full System backup and any associated incremental backups are complete and available prior to the start of the transition.
4. Prior to shutdown the system is quiesced (work queues are allowed to run until they are empty).
5. The 24-hour clock starts when system inputs are disabled, and completes when the system is again receiving operational data.
6. Once operations are restored, the use of the other modes is kept to a minimum to allow backlogged processing to catch-up.
7. The DAACs will coordinate the ECS or the Data Providers holding/buffering of L0 and higher products.
8. DAACs will coordinate with other DAACs, Users (including LPGS), etc., to keep them informed of data outage plans and schedules.
9. Landover CM will conduct an informal audit of the critical COTS SW at the DAACs versus the baseline prior to the transition.
10. DBCCs have been performed against all transitioning databases.

### 4.3 6A.04 to 6A.XX Transition Approach

The 6A.04 to 6A.XX (6A.05) transition reflects the same basic approach as has been used in the 5B to 6A transition except that the entire mode should not be fully deleted prior to 6A.XX installation. Table 4.3-1 identifies the sequence of steps to transition the OPS mode. The estimated times are for the transition in VATC. The estimated times for each DAAC will be different, so the transition approach estimated times would have to be adjusted for each DAAC.

**Table 4.3-1. High-Level Sequence of Events for the VATC**

Event	Estimated Time	Cumulative time	See Section
1. Pre-transition Preparation	N/A	0 hours	4.3.1
2. Quiesce the System	0 hours	0 hours	4.3.2
3. Shutdown/Backup	2 hours	2 hours	4.3.3
4. Create New Registry Tree for 6A.XX (6A.05)	1 hour	3 hours	4.3.4
5. Install 6A.XX (6A.05)	2 hours	5 hours	4.3.5
6. Configure Registry	2 hours	7 hours	4.3.6
7. Convert System Databases	4 Hours	11 hours	4.3.7
8. Restart the System	1 hour	12 hours	4.3.8
9. ESDTs	0 Hour	12 hours	4.3.9
10. Checkout Installation and Databases	8 hours	20 hours	4.3.10
11. Re-enable Operational Data Inputs	0 hour	20 hours	4.3.11

The following sections describe the major transition activities for the OPS mode. Subsets of these procedures are used in the TS1 and TS2 modes. These sections describe the general sequence of events. The exact sequence will be documented in the detailed installation/transition instructions provided with the release.

#### 4.3.1 Pre-Transition Preparation

The following activities should be performed prior to the start of transition. This list does not necessarily reflect the actual sequence of events:

- a) Receive, untar, and stage drop 6A.XX (6A.05).
- b) Perform full backup of mode and databases before the transition.
- c) Perform pre-transition installation steps from the installation instructions.
- d) Verify versions of critical COTS products.
- e) Save objects and data associated with these DAAC unique extensions.

### **4.3.2 Quiesce the System**

System external inputs are suspended. These inputs include user requests as well as ingest operations. For example, EDC personnel coordinate the suspension of Landsat data from the LPS.

The queues should be monitored to determine when they are inactive.

### **4.3.3 Shutdown/Backup**

The system shut down is performed (stopping all of the ECS processes) after the system has been quiesced.

Perform incremental backup of mode and databases after shutdown. The backup of system configuration parameters and databases performed at this stage are complete and consistent across all ECS databases since there is no database update activity occurring.

Perform pre-installation steps from the installation instructions.

### **4.3.4 Create New Registry Tree for 6A.XX (6A.05)**

Create new Registry Tree for 6A.05 by copying 6A.04 registry tree branch name into a 6A05 registry tree branch name. The Registry needs an update to accommodate a New Server (CSS) NameServer.

### **4.3.5 Install 6A.XX (6A.05)**

ECSAssist is used to perform the installation of release 6A.XX (6A.05).

### **4.3.6 Configure Registry**

The Registry must be updated to accommodate the changes associated with 6A.XX (6A.05) in the following ways:

- Patch the Registry using rgypatch files.

### **4.3.7 Convert System Databases**

The 6A.XX (6A.05) Release contains database verification scripts, as required for databases affected by the 6A.XX (6A.05) transition, that will perform the following functions:

- Build and Patch scripts to create or update the database schema and/or data. These scripts are either run using ECSAssist or from the command line.
- Verify scripts (xxDbVerify) to list the appropriate logical key data values within a database - used to qualitatively compare the database before and after the transition.

Existing 6A.04 Release verification scripts will also be used to perform the following functions:

- Description scripts (DbDesc) to view the structure of the database - used to perform comparisons to a correct 6A.XX (6A.05) transition, tested/checkedout database from the VATC. In addition, the scripts are used for database comparisons before and after transition.
- Checksum scripts (DbChecksum) to quantitatively compare the database before and after transition
- Verify scripts (xxDbVerify) to list the appropriate logical key data values within a database - used to qualitatively compare the database before and after the transition.

Transition team should execute these scripts at the proper time during the install process. Table 4.3.7-1 shows the databases to be converted in the migration from 6A.04 to 6A.XX (6A.05).

**Table 4.3.7-1. Database Transition scripts between 6A.04 and 6A.XX (6A.05)**

	Database	Transition 6A.04 to 6A.XX (6A.05)	Notes
1	DMS Database	TBD.	
2	INGEST Database	Transition using ECSAssist database patch script. Verify using DbVerify, DbDesc and DbChecksum.	
3	IOS Database	No transition.	
4	MSS Database	No transition.	
5	NameServer Database	Install using ECSAssist database build script. Verify using DbDesc	
6	PDPS Database	TBD.	
7	Registry Database	No transition. Install new 6A.05 tree.	
8	SBSRV Database	No transition.	
9	SDSRV Database	Transition using ECSAssist database patch script. Verify using DbVerify, DbDesc and DbChecksum.	Update search indices for existing global granules
10	STMGT Database	Transition using ECSAssist database patch script. Verify using DbVerify, DbDesc and DbChecksum.	

The following subsections provide an overview of the database changes associated with the 6A.04 to 6A.XX (6A.05) transition. The detailed database changes can be found in the Database Change Documentation of the 6A.XX(6A.05) PSR document.

#### 4.3.7.1 DMS Subsystem

Current	Change	NCR or Capability ID
		TBD

#### 4.3.7.2 Ingest Subsystem

Current	Change	NCR or Capability ID
There is no INGEST database entry for the two new MODIS ESDTs.	Added Patch 6114- patch script to add these two datatypes to the CurrentDataType and DataTypeTemplate tables	30983
	Added Patch 6115- Added another insert statement to reflect non SDT for FileTemplate key	29737
	Added patch 6116- Create new INGEST database entries for TES/ Aura ESDTs	30980
	Add patch 6117- Five new GLAS Ancillary ESDTs added	30995 (in progress)

#### 4.3.7.3 IOS Subsystem

- No new capability or NCRs have been merged to the 6A.05 baseline at this time.

#### 4.3.7.4 MSS Subsystem

- No new capability or NCRs have been merged to the 6A.05 baseline at this time.

#### 4.3.7.5 NameServer

Current	Capability ID
NameServer is a newly established database that will be utilized as a result of the transition from DCE to Sockets.	15520

#### 4.3.7.6 PDPS Subsystem

Current	Change	NCR or Capability ID
		TBD

#### 4.3.7.7 REGISTRY Subsystem

Create new Registry Tree for 6A.05 by copying 6A registry tree branch name into a 6A05 registry tree branch name. The Registry needs an update to accommodate a New Server (CSS) NameServer.

#### 4.3.7.8 SBSRV (Subscription) Subsystem

- No new capability or NCRs have been merged to the 6A.05 baseline at this time.

#### 4.3.7.9 SDSRV Subsystem

Current	Change	NCR or Capability ID
	Patch - Need to rename the EcDsSdSrvDB.pkg	31004
	Patch TBD	31032 (in progress)

#### 4.3.7.10 STMGT/DDIST Subsystem

Current	Change	NCR or Capability ID
Select * are in STMGT scripts	Added Patch Remove SELECT * from STMGT/Ddist DUE triggers	30910
	Added Patch	30663
	Added Patch	30977
No database entry for two new MODIS ESDTs	Added Patch- two new datatypes are being added to the database, they are MOD09Q1, MOD13Q1 Apply Patch 74	30983

#### 4.3.8 Restart the System

The following servers **MUST** be **WARM STARTED**:

- **EcInPolling** clients
- **EcDsStPullMonitorServer**

The remaining ECS System should be COLD STARTED.

#### 4.3.9 ESDTs

No ESDTs will need to be updated during installation.

## **4.3.10 Checkout the Installation and Databases**

### **4.3.10.1 Goals of Checkout**

There are two principal goals of the post-transition checkout activities:

- Confirm the integrity of data holdings that existed prior to the transition, and
- Ensure that basic mission services (defined below) are operational.

### **4.3.10.2 Checkout Approach**

Each DAAC's archives will contain mission data. Therefore, integrity of data acquired before transition must be verified. In addition, data storage services integrity must take priority over data access services.

Assumptions:

- Activity in other modes is restricted during transition checkout in the OPS mode.
- Each DAAC already has checkout procedures for validating the integrity of the existing ECS baseline.
- Each DAAC will develop their own 6A.XX (6A.05) checkout procedures based on their existing procedures and procedures provided with the 6A.XX (6A.05) PSR and the VATC transition exercise.

### **4.3.10.3 VATC Checkout Sequence**

System checkout begins with the verification of the databases. This verification includes pre and post transition database DbDesc, DbChecksum and DbVerify comparisons.

The system checkout continues with the execution of the standard checkout procedures, augmented for the 6A.XX (6A.05) transition. The functional checkout is divided into primary and secondary activities. In case the transition is at risk of exceeding the allocated time, primary activities must occur within the transition window. Secondary activities are desirable, but are not mandatory. These activities will be performed as time allows. The primary checkout procedures are intended to verify that the custom software is installed and configured. Specific functionality and NCR fixes have been tested in the VATC and on-site in TS2 and TS1 modes.

The primary checkout activities include:

- 1) Verify integrity of primary services on existing data (Search, order, subsetting & distribution)  
- Existing checkout procedure
- 2) Verify ingest of new data (ingest and archive) - Existing checkout procedure
- 3) Verify integrity of primary services on new data (subsetting & distribution) - Existing checkout procedure

- 4) Verify key functionality added in 6A.XX (6A.05). These are not full acceptance tests, but rather a cursory check to verify that the installation was correct.– New checkout procedure(s)

The secondary test activities are run at the discretion of the DAAC. These secondary activities include:

- 1) Verify secondary services (Billing and MOC interfaces) – Existing checkout procedure
- 2) Verify On-demand production - Existing checkout procedure
- 3) Verify media distribution services - Existing PDS interface checkout procedure
- 4) Verify secondary functionality added in 6A.XX (6A.05). These are not full acceptance tests, but rather a cursory check to verify that the installation was correct.

The following is a listing of VATC checkout procedures associated with the 6A.XX (6A.05) baseline:

1. SDSRV Thread Rundown

This test is designed specifically to verify the SOCKET capability.

2. D3 Ingest

This test is designed specifically to verify the SOCKET capability.

3. L7 Acquire with fixed scene and FtpPull

This will be a regression test to verify that existing functionality still works.

4. L7 Acquire with Floating Scene and FtpPush

This will be a regression test to verify that existing functionality still works.

5. Aster Acquire with FtpPull

This will be a regression test to verify that existing functionality still works.

6. Machine-to-Machine Gateway

This will be a regression test to verify that existing functionality still works.

7. MOJO Gateway

This will be a regression test to verify that existing functionality still works.

8. Subscription Server (SBSRV) and Subscription GUI Test For CCS Middleware

This will be a regression test to verify that existing functionality still works.

9. SDSRV Concurrent Thread Test

This will be a regression test to verify that existing functionality still works.

10. NameServer Fault Handling

This test is designed specifically to verify the SOCKET capability.

#### 11. Limit Server Socket Connection (Maximum Listening Threads) Test

This test is designed specifically to verify the SOCKET capability.

#### 12. ASTER On-Demand Processing

This will be a regression test to verify that existing functionality still works.

#### 13. MODIS End to End

This test is designed specifically to verify the SOCKET capability.

#### 14. Distribution Server (DDIST) GUI Test

This test is designed specifically to verify the SOCKET capability.

### **4.3.11 Re-enable Operational Data Inputs**

At this point, the 6A.XX (6A.05) system has been verified using the standard checkout procedures, which have been augmented for transition as discussed above. All major system functions, most critically the capability to ingest and merge level-0 data, are verified sequentially in all three modes. In addition, DAAC personnel have performed additional verification functions after transition in the test mode.

Re-enabling processing consists of restarting gateways/servers supporting external interfaces (as required) and requesting data providers to resume sending data. Initially, a single granule of each data type is ingested. The transition team will support while DAAC operations personnel verify that the granules are properly archived. At this point, the system is fully restored to operations. In case of breakage, DAAC management decides whether to retain 6A.XX (6A.05) or fall back to 6A.04. Since these procedures have been practiced and verified several times, the risk at this point is minimal.

### **4.3.12 Post Transition Activities**

No post transition activities have been identified at this time. The transition team will apprise the DAAC diligently of any such activity.

# 5. Transition Logistics

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## 5.1 Roles and Responsibilities

The following is a description of the skill set recommended for the 6A.04 to 6A.XX (6A.05) transition team.

A lead engineer responsible for managing the overall operation of the transition. The team should have a subsystem expert in each of the following areas: Storage management and distribution; Planning and Processing; Science Data Server; Ingest; Infrastructure, Data Management, and Advertising; and Client. Each subsystem expert should have experience in the installation, configuration, operation and troubleshooting of the subsystem. This involves detailed knowledge of the database operations associated with the subsystem, if applicable, as well as experience with running subsystem testing.

Additionally, the team will require a separate full time Sybase person, responsible for monitoring all changes to system database to ensure database integrity through the transition.

## 5.2 Transition Schedule

The overall transition schedule for 6A.04 to 6A.XX (6A.05) will be as followed:

The ECS transition IPT in Landover will create a detailed schedule in Primavera for the transition exercise in VATC; however, the transition IPT will put only one activity per DAAC for the transition at the DAAC. These activities will not have any earned value associated with it and will be used only for reference purposes.

The transition IPT will develop the particulars of the transition exercise with DAACs at the Deployment IPT meetings leading to the transition exercise.

## 5.3 Transition Documentation

Additional 6A.XX (6A.05) transition related information will be produced and contained in:

- 6A.XX (6A.05) PSR Document - Delivered at 6A.XX (6A.05) PSR.

This document contains the following:

1. 6A.XX (6A.05) installation instructions - Describes in detail the instructions for installing 6A.XX (6A.05).
2. Tar File Listings – Describes the contents of the tar files that are delivered to the DAACs.
3. NCR Listings - Describes the status of NCRs created during the testing of 6A.XX (6A.05).

4. Test Procedures - Documents test procedures executed during the verification of 6A.XX (6A.05).
5. Database Change Documentation - Describes the database differences between 6A.04 and 6A.XX (6A.05).

VATC Transition Checkout Procedures – Incorporated into this document prior to transition testing in the VATC. This is a subset of test procedures intended only to verify that the VATC custom software is properly configured following transition. DAACs should follow their own checkout procedures to verify successful transition.

## **5.4 Transition Exercise In Landover**

The ECS transition IPT in Landover has access to the Development SWIT functionality lab and the SIT VATC, locations for transition exercise, for two weeks after 6A.XX (6A.05) CSR. The transition IPT will use the first week to install release 6A.XX (6A.05) in the functionality lab and VATC performing test and transition procedures. The team will then provide exercise to all the four DAACs in the remaining week. The logistics of the exercise will be worked out individually with the DAACs.

A high level view of the plan for 6A.04 to 6A.XX (6A.05) transition exercise that will be provided at VATC is presented in Table 5.4-1

**Table 5.4-1. Plan for the 3-Week Transition Testing and Exercise in the Functionality Lab and VATC (1 of 3)**

Day	Activities	Remarks
<b>WEEK ONE</b>		
Mon. 9AM TBD	<ul style="list-style-type: none"> <li>• Review of schedule, team assignments, responsibilities, transition plan and install instructions</li> <li>• Verify prerequisite COTS</li> <li>• Pre-transition steps</li> <li>• Shutdown Functionality Lab transition mode</li> <li>• Fully backup Functionality Lab transition mode and databases</li> </ul>	In Functionality Lab. Performed by Landover Transition team before DAAC team(s) arrive.
Tue. 9AM TBD	<ul style="list-style-type: none"> <li>• Create New Registry Tree for 6A.XX (6A.05)</li> <li>• Pre-installation steps</li> <li>• Install 6A.XX (6A.05)</li> <li>• Execute “mkcfg” to create new and updated CFG files.</li> </ul>	In Functionality Lab. Performed by Landover Transition team before DAAC team(s) arrive.
Wed. 9AM TBD	<ul style="list-style-type: none"> <li>• Pre-database transition steps</li> <li>• Convert System databases using Build and Patch database scripts</li> <li>• Post-database transition steps</li> <li>• Start NameServer</li> <li>• Start Registry Server</li> <li>• Start remaining servers</li> <li>• Shutdown DCE</li> </ul>	In Functionality Lab. Performed by Landover Transition team before DAAC team(s) arrive.
Thu. 9AM TBD	<ul style="list-style-type: none"> <li>• Perform 6A.XX (6A.05) capabilities checkout tests</li> </ul>	In Functionality Lab. Performed by ECS Transition team before DAAC team(s) arrive. .
Fri. 9AM TBD	<ul style="list-style-type: none"> <li>• Complete 6A.XX (6A.05) capabilities checkout tests</li> </ul>	In Functionality Lab. Performed by ECS Transition team before DAAC team(s) arrive. .

**Table 5.4-1. Plan for the 3-Week Transition Testing and Exercise in the Functionality Lab and VATC (2 of 3)**

Day	Activities	Remarks
<b>WEEK TWO</b>		
Mon. 9AM TBD	<ul style="list-style-type: none"> <li>• Review of schedule, team assignments, responsibilities, transition plan and install instructions</li> <li>• Verify prerequisite COTS</li> <li>• Pre-transition steps</li> <li>• Shutdown VATC transition mode</li> <li>• Fully backup VATC transition mode and databases</li> </ul>	In VATC. Performed by ECS Transition team before DAAC team(s) arrive.
Tue 9AM TBD	<ul style="list-style-type: none"> <li>• Create New Registry Tree for 6A.XX (6A.05)</li> <li>• Pre-installation steps</li> <li>• Install 6A.XX (6A.05)</li> <li>• Execute “mkcfg” to create new and updated CFG files.</li> <li>• Pre-database transition steps</li> <li>• Convert System databases using Build and Patch database scripts</li> <li>• Post-database transition steps</li> </ul>	In VATC. Performed by ECS Transition team before DAAC team(s) arrive.
Wed. 9AM TBD	<ul style="list-style-type: none"> <li>• Start NameServer</li> <li>• Start Registry Server</li> <li>• Start remaining servers</li> <li>• Shutdown DCE</li> <li>• Perform 6A.XX (6A.05) capabilities checkout tests</li> </ul>	In VATC. Performed by ECS Transition team before DAAC team(s) arrive.
Thu. 9AM TBD	<ul style="list-style-type: none"> <li>• Complete 6A.XX (6A.05) capabilities checkout tests</li> <li>• Restore 6A.04 baseline</li> <li>• Pre-transition steps</li> <li>• Shutdown VATC transition mode</li> <li>• Fully backup VATC transition mode and databases</li> </ul>	In VATC. Performed by ECS Transition team before DAAC team(s) arrive.
Fri. 9AM TBD	<ul style="list-style-type: none"> <li>• Pre-transition steps</li> <li>• Shutdown VATC transition mode</li> <li>• Fully backup VATC transition mode and databases</li> </ul>	In VATC. Performed by ECS Transition team before DAAC team(s) arrive.



## **5.5 Transition Risk Mitigation**

The following is a short list of risks associated to transition and the mitigation strategies for each.

### **5.5.1 Data loss/corruption: Low**

Contingencies: Perform a special full backup of system configuration files and databases prior to transition in each mode. There is also a secondary backup consisting of the routine full-system backup plus the daily incremental backups.

### **5.5.2 Problems encountered preventing a 24 hour transition in OPS mode: Low**

Contingencies: Restore ECS system from the contingency backup. Perform real-time assessment of problem to determine if the installation/transition can be re-performed or other action taken to correct the problem, possibly extending beyond the 24-hour period. For GSFC and LaRC, procedures to move buffered data from the Ingest server to other storage are provided.

### **5.5.3 Problems restoring system from backup: Low**

Contingency: Use full-system backup and daily incremental backups to restore the system.

### **5.5.4 Data loss/corruption in EDOS transfers while Ingest is shut down for transition: Low**

Contingency: Provide procedures to manually load data from EDOS supplied tape.