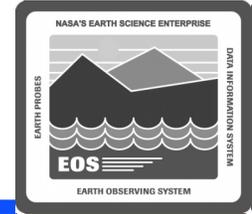


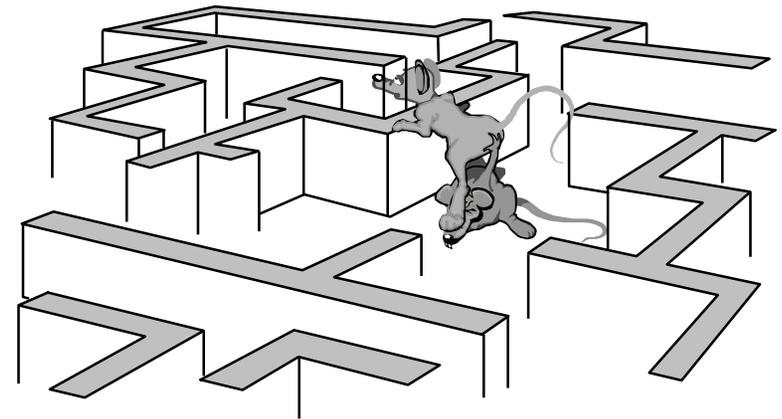
CONFIGURATION MANAGEMENT

ECS Release 6A Training

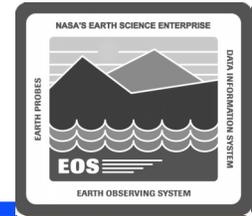
Overview of Lesson



- **Introduction**
- **Configuration Management Topics**
 - M&O role in CM activities
 - Configuration Control Boards (CCBs)
 - Configuration Change Request (CCR) Process
 - Software Change Process
 - Hardware Change Process
 - Baseline Change Process
- **Practical Exercise**

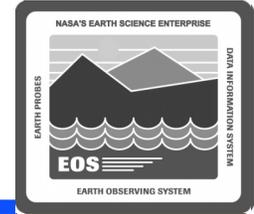


Objectives



- **Overall: Proficiency in ECS Configuration Management**
 - Describe M&O role in CM activities
 - List Configuration Control Boards (CCBs), roles, and responsibilities
 - Process a Configuration Change Request (CCR)
 - Prepare a request for impact analysis
 - Process a software change
 - Review Configuration Parameters in Configuration Registry
 - Process a hardware change
 - Process a baseline change *Not currently fully supported*

Importance

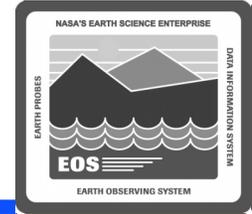


Lesson provides preparation for several roles to ensure effective CM for implementation of system changes

- **CM Administrators**
- **System Engineers, System Test Engineers, Maintenance Engineers**

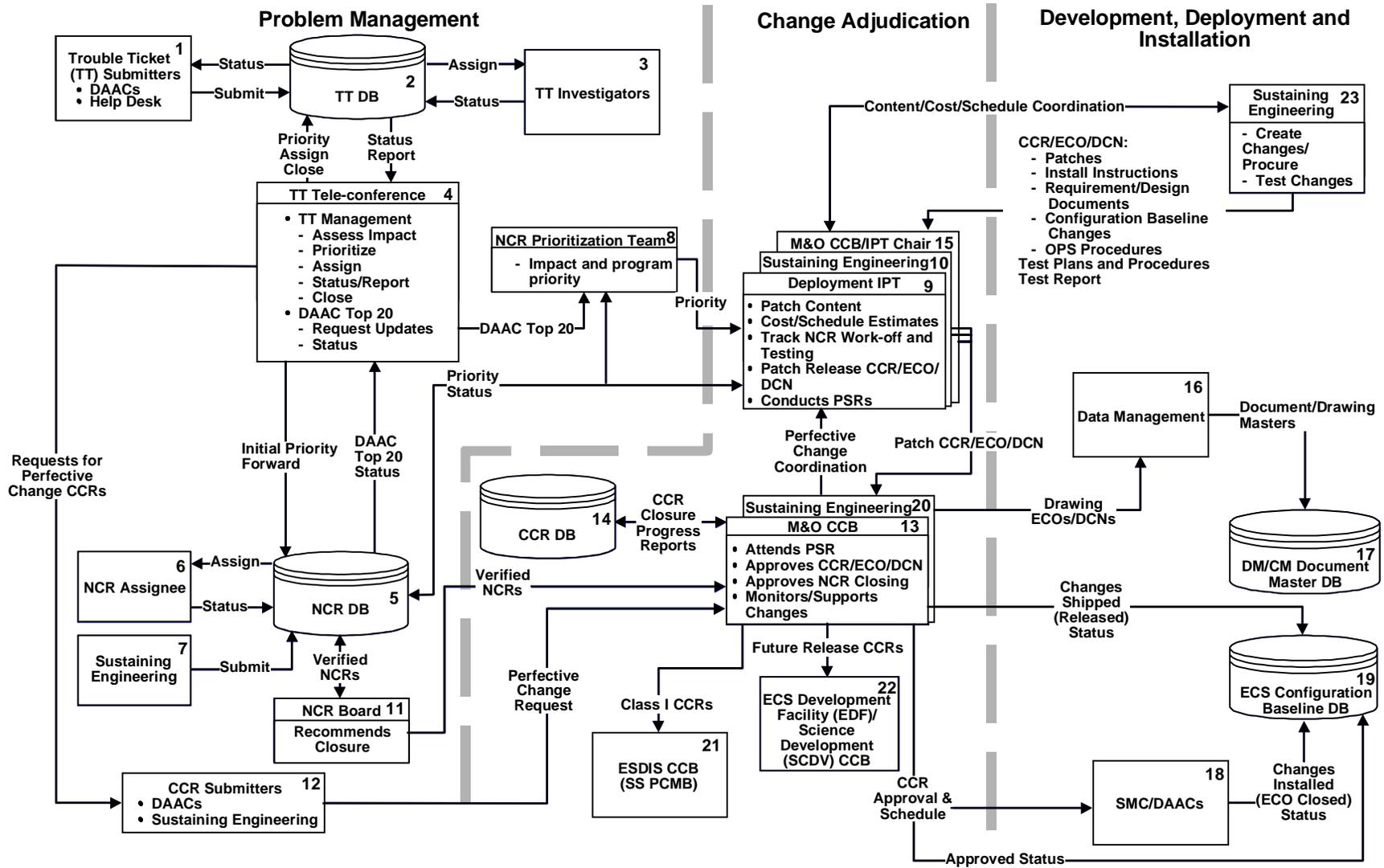
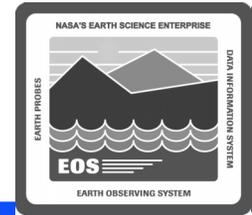


M&O Role and CM Activities

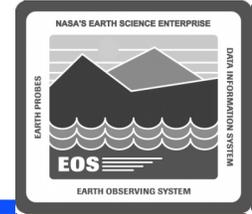


- **Maintenance and Operations CM activities**
 - After acceptance of ECS
 - Administrative and technical support of change control
 - Documentation and coordination of changes to site hardware, software, and procedures
 - Configuration identification
 - Maintenance and control of technical documentation
 - Configuration status accounting
 - Recording and reporting information about the configuration status of ECS documentation, hardware, and software
 - XRP-II
 - Configuration audits
 - M&O supports internal and ESDIS assessments of project compliance with relevant CM plans

M&O Role: Change Management

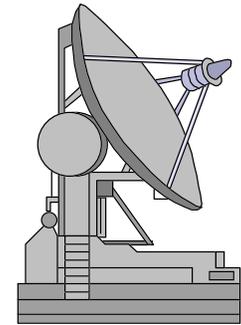


M&O Role: Science Software CM

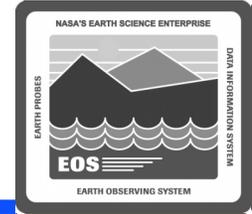


- **Science Software CM**

- developed at Science Computing Facilities
- upon delivery to DAAC, enters custody of DAAC CMO
- SSI & T: DAAC management and I & T team
- M&O role
 - support during I & T
 - support DAAC Manager after acceptance
 - if Science Software has inter-DAAC dependencies, support coordination with affected DAACs
 - ensure any necessary coordination with ESDIS prior to moving Science Software into production operations

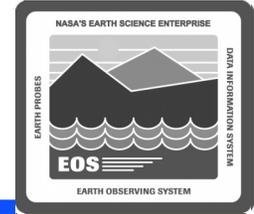


System Operations Support

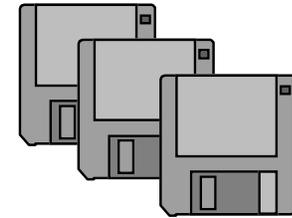


- **SOS -- System Operations Support**
 - liaison between sites and ESDIS CCB
 - liaison between operations and the Sustaining Engineering Organization (SEO)
 - coordination of CM functions
 - maintenance of Change Request Manager (DDTS)
 - oversight for dissemination of controlled items to sites
 - monitoring of installed configurations of hardware and software for conformance to approved baselines
 - M&O ensures coordination and availability of needed data for change management

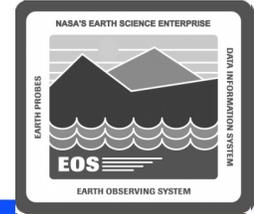
M&O Role: Maintenance of the M&O Libraries



- **Maintenance of M&O Documentation and Software Library**
 - both common and site-specific software
 - site personnel responsible for CM associated with library

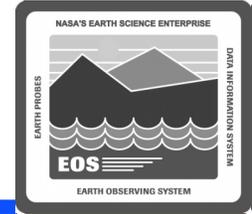


M&O Role: Library Administration



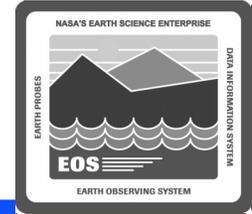
- **Soft or hard copy maintained in library**
- **Document support directories**
 - CUSTOM/docs: file descriptive materials
 - CUSTOM/docserver: document repository
- **Microsoft Access database for library holdings and index**
- **Baseline Manager tool for documents that are under baseline CM control**

Baseline Control



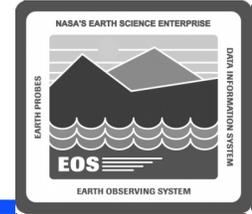
- **Baseline control milestones during maintenance and operations**
 - **Installation Plan (IP): COTS hardware configuration**
 - **Consent to Ship Review (CSR): hardware and software configuration and plans for host sites**
 - **Release Readiness Review (RRR): documents state of configuration items at each host site**
 - **Operational Readiness Review (ORR): documents flight-certified, ESDIS-approved, fully integrated EGS**
- **Site authority**
 - **ESDIS - authority over changes to common software**
 - **site CCB - authority over site-specific Class II changes**
 - **site-specific parameters for COTS software**
 - **specific configuration of tools and utilities, as delegated by ESDIS**

Configuration Identification



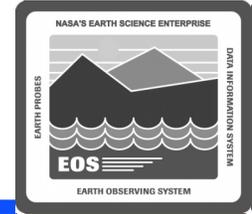
- **Establishes unique identifiers for ECS control items: Hardware, Software, Databases, Documentation**
- **ECS System Baseline Specification identifies Configuration Items (CIs)**
 - **Defines configuration baseline data structure and data schema**
 - **Delineates how items will be named, described, versioned, and controlled**
 - **Defines the item's associated engineering specifications and location of the actual controlled baseline data (including the ECS Configuration Baseline database)**
- **Configuration Baseline may change with a new System Release or with a patch**

Configuration Status Accounting



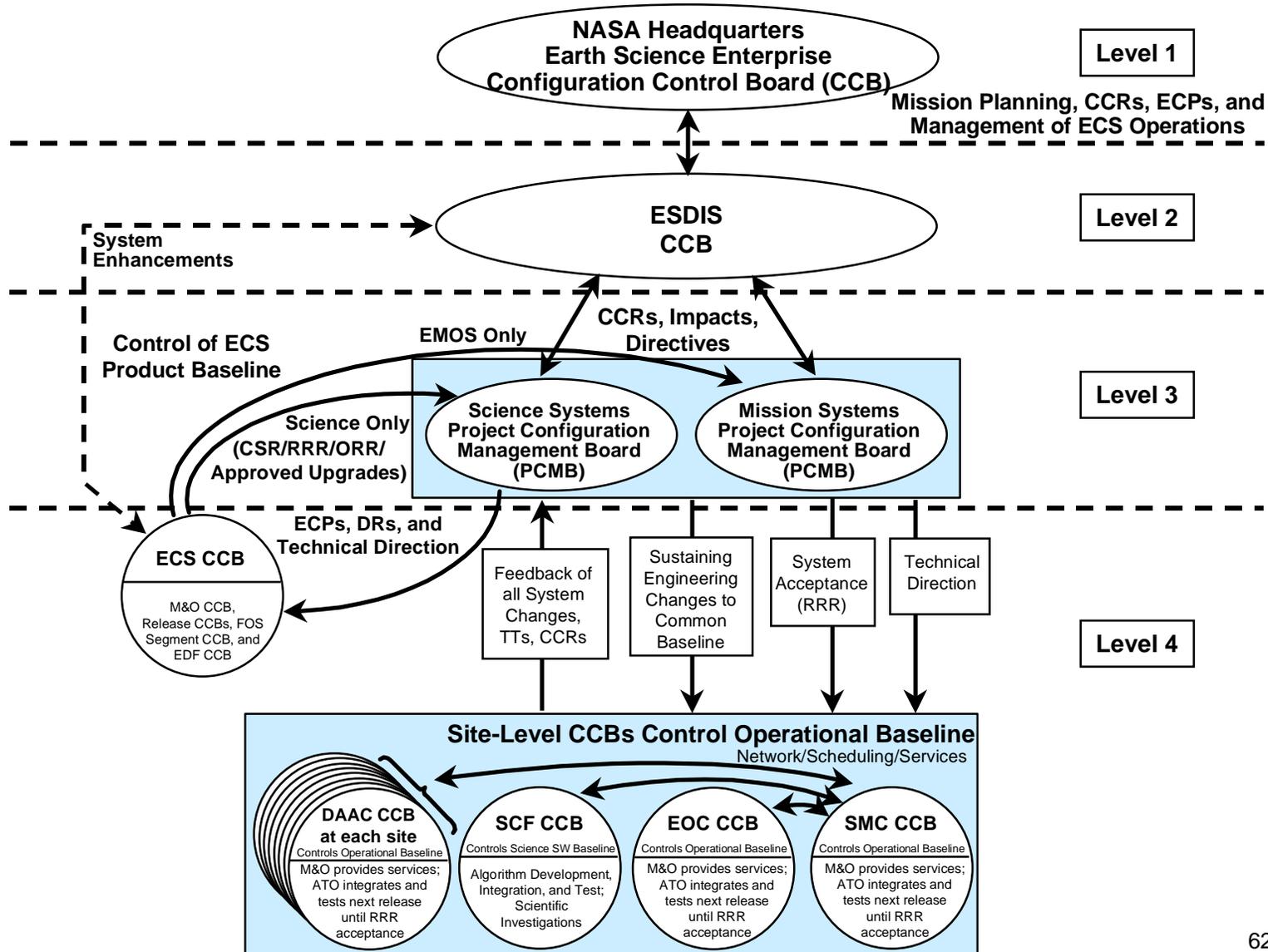
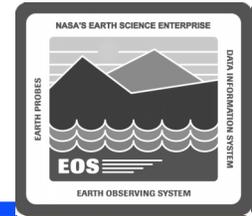
- **Reports, metrics, records to support configuration management with status tracking information**
 - identification and resolution of configuration problems (e.g., Trouble Ticket, NCR listings, progress reports)
 - M&O CCB review/approval of baseline changes (e.g., CCR listings, progress reports, CCB agendas, minutes)
 - monitoring progress for change implementation (e.g., ECO/DCN status reports, IPT Drop Matrix listings)
 - maintenance of ECS Configuration Baseline status (e.g. Approved/Shipped Changes, Installed Changes)
 - Verification and auditing of baselines (e.g. discrepancy metrics/reports reflecting differences between the approved and installed baselines in both the testing environment in the Verification and Acceptance Test Center [VATC] or Performance Verification Center [PVC] and at the DAACs)

Configuration Audits

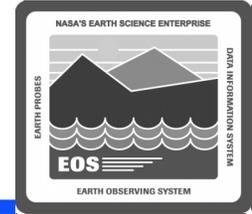


- **Conducted by ECS CMO, supported by site CM**
- **Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) validate that:**
 - **as built configuration compares with the approved baseline**
 - **test results verify that each ECS product meets its specified performance requirements to the extent determinable by testing**
 - **the as-built configuration being shipped compares with the final configuration tested in the VATC**
- **Differences between the audited configuration and the final tested configuration are documented**
- **Automated scripts compare DAAC configurations to baseline documentation**

CCB Hierarchy



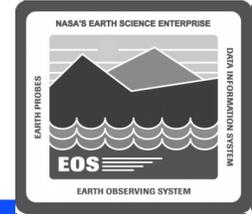
CM Responsibilities



- **ESDIS Management**
 - establishes ECS CM policies
- **CCBs**
 - classify, prioritize, evaluate, recommend, and approve (within their authority) changes to baselines
- **CM Administrators (at SMC, EOC, DAACs, SCFs)**
 - establish and maintain CM records
 - facilitate the configuration change request (CCR) process
 - monitor and report status of proposed and approved CM actions
 - support their respective CCB (as required)

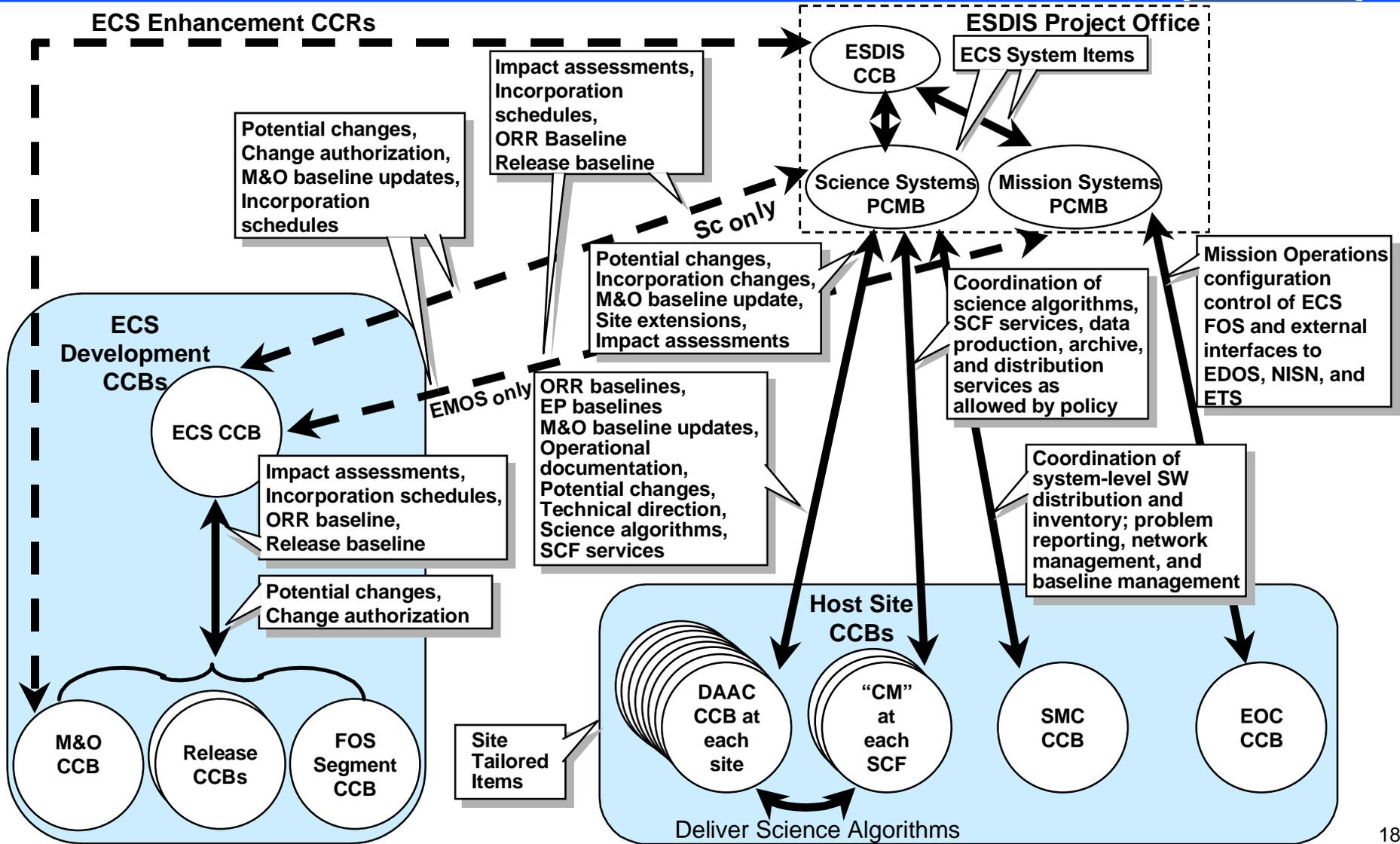
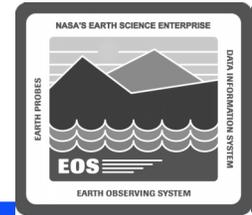


CM Responsibilities (continued)

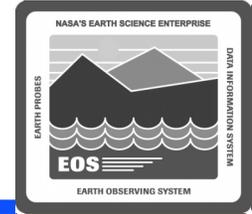


- **Sustaining Engineering Organization (SEO) --**
 - assesses feasibility and cost, schedule and performance impacts of proposed system-wide changes
 - implements such changes when directed by ESDIS
- **DAAC Sustaining Engineers --**
 - assess DAAC impacts of system-wide proposed changes
 - develop and maintain ESDIS-approved DAAC-specific modifications to ECS products
- **Maintenance Engineers --**
 - maintain ECS HW and report configuration changes resulting from maintenance actions

Operational CCB Relationships

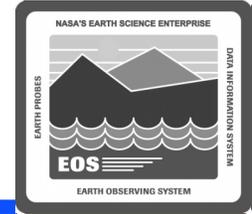


Science Software and Change Control



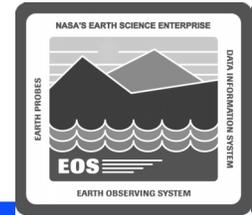
- **Science Computing Facility (SCF) performs configuration control**
 - Software and Databases to be executed at another site
 - SCF resources that are made available to EOSDIS community
- **ECS M&O function directed by DAAC CCB**
 - Accepts science software and data from the SCF
 - Provides services to support EOC control of the EOC operational baseline
- **Central coordination by Project Control Management Board**
 - ECS integrity and quality of service
 - Coordination with internal and external networks, systems, facilities
 - ESDIS CCB visibility into ECS operations
 - Convenient user administrative services

Configuration Change Requests (CCRs)



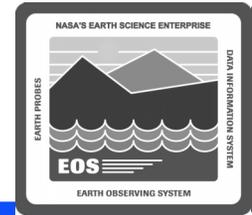
- **No undocumented changes**
 - all requests for change documented using CCR form
 - CCR generated against the baseline affected by the proposed change
 - Form can be completed electronically
 - Word processing form
 - Change Request Manager tool (CM Administrator)
- **CCB review**
 - CCR submitted to appropriate CCB
 - CCR form may also be a cover sheet for a request to CCB for a deviation or waiver from baseline

ECS CCR Form



Earth Observing System Data and Information System (EOSDIS) Core System (ECS) Configuration Change Request (CCR)						
1. Configuration Change Board (CCB) ESDIS:___ ECS:___ SMC:___ DAAC: GSFC___, LaRC___, ASF___, EDC___, JPL___, NSIDC___, ORNL___ EOC:___					2. CCR No.	
3. Submitted Date:	4. Revision	5. Priority Emergency <input type="checkbox"/> Urgent <input type="checkbox"/> Routine <input type="checkbox"/>	6. Change Class	7. Status		
8. CCR Title:						
9. Originator: _____ Org: _____ e-mail: _____ phone: _____						
10. Approval: _____ signature _____ date _____						
11. Reason for Change <div style="text-align: right;">(indicate attachment ___)</div>						
12. Description of Change <div style="text-align: right;">(indicate attachment ___)</div>						
13. Impact Analysis: Cost: <input type="checkbox"/> None <input type="checkbox"/> Small <input type="checkbox"/> Medium <input type="checkbox"/> Large <small>(Not exceeding \$100,000) (\$100,000 to \$500,000) (Over \$500,000)</small> Evaluation Engineer: _____ Org: _____ e-mail: _____ phone: _____ Impact Evaluators: ESDIS___; ECS Dev___; SEO___; SMC___; DAACs: GSFC___, LaRC___, ASF___, EDC___, JPL___, NSIDC___, ORNL___; EOC___; Others _____ (indicate attachment ___)						
14. Comments: (Indicate Sites/ Organizations Affected) <div style="text-align: right;">(indicate attachment ___)</div>						
15. Board Action: <input type="checkbox"/> Approved <input type="checkbox"/> Withdrawn <input type="checkbox"/> Disapproved <input type="checkbox"/> Deferred Until _____ <div style="text-align: right;">date</div> Further Action Required: <input type="checkbox"/> ECP <input type="checkbox"/> Waiver <input type="checkbox"/> Deviation <input type="checkbox"/> Tech Direction <input type="checkbox"/> Contract Mod <input type="checkbox"/> DCN Other: _____						
16. CCB Approval Chair: _____ <div style="text-align: right;">signature date</div>				17. CCR Implemented CM Admin. signature: _____ date: _____		

Change Request Manager (DDTS)



ClearDDTS 4.1

File Select Metrics Options Special/Support To Do List Help

'Change_Request' Records [SNAORTVCDF] [ECS_CHNG_REQ] 1 record

1 MSSdd00617 Add GUI to X11 Program (Example Only) II routine

Submit Commit Clone Refresh Clear Next Prev Print... Gripe

The workspace currently contains 1 record

Record

Modify Change_State Links CM Help

ECS_CHNG_REQ Page 1/3

CCR Number: MSSdd00617 Submitted : 960521 Revision:
Priority : routine Change Class: II
Status : New Enclosures : 3

Title:
Add GUI to X11 Program (Example Only)

CCR ORIGINATOR INFORMATION
Originator Name: Joseph Winkler
Organization : GSFC
Phone Number : (904)583-9736
Organization Evaluation Engineer: J. Holson

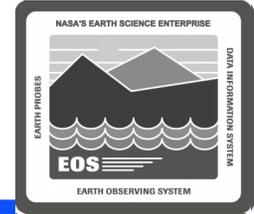
CONFIGURATION MANAGEMENT ADMINISTRATOR
CM Admin. Name: efinch
Organization : GSFC
Phone Number : (301)935-4738

Enclosures

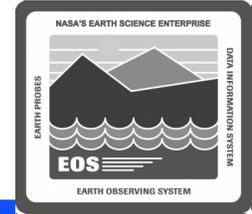
History Proposed Change Impact Summary Resolution

Request for Impact Analysis



- **Support of ESDIS CCB may require assessment of the impact of a proposed CCR on local or system maintenance and operations**
- **Assessing the impact of CCRs with significant system implications and/or potential system-wide application may require the assistance of the ECS development organization**
- **Formal request for impact assessment according to Mission Operation Procedures for the ECS Project (611-CD-510-001)**
- **Impact assessments consolidated into a CCR Impact Summary**

CCR Impact Analysis Form



CCR Impact Analysis

Responder Request Number: _____
Responder: _____
Responder Point of Contact:
address: _____
phone: _____
e-mail: _____

Evaluation Engineer: _____
Evaluation Engineer Point of Contact:
address: _____
phone: _____
e-mail: _____
Requested Return Date: _____

CCB Schedule Date: _____
CCR Number: _____
CCR Log Date: _____
CCR Originator: _____
CCR Originator Point of Contact:
address: _____
phone: _____
e-mail: _____

Rough Order of Magnitude (ROM) Impact Analysis

Basis of Estimate:

Technical Assumptions and Comments:

Cost Impact:

- None []
- Small [] < \$100,000
- Medium [] \$100,000 < x < \$500,000
- Large [] > \$500,000

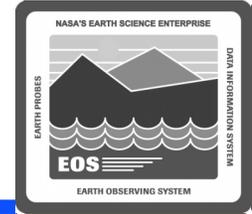
Schedule Impact:

Technical Assessment: (Your impact analysis should consider the implementation approach; interfaces affected; HW or SW changes required; documentation changes required -- change from/to pages; suggested alternatives, if any; and impact to security features. If your system is not impacted, please provide that information to the CM Administrator.)

Comments:

Signed: _____
(Responder)
Date: _____

CCR Impact Summary



CCR Impact Summary

Evaluation Engineer: _____

Evaluation Engineer Point of Contact:

address: _____

phone: _____

e-mail: _____

CCR Board Date: _____

Resources Summarized:

Technical Summary:

ROM Summary (BOE, Cost, and Schedule):

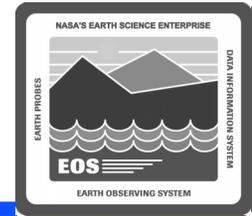
Recommendation:

Signed: _____

(Evaluator)

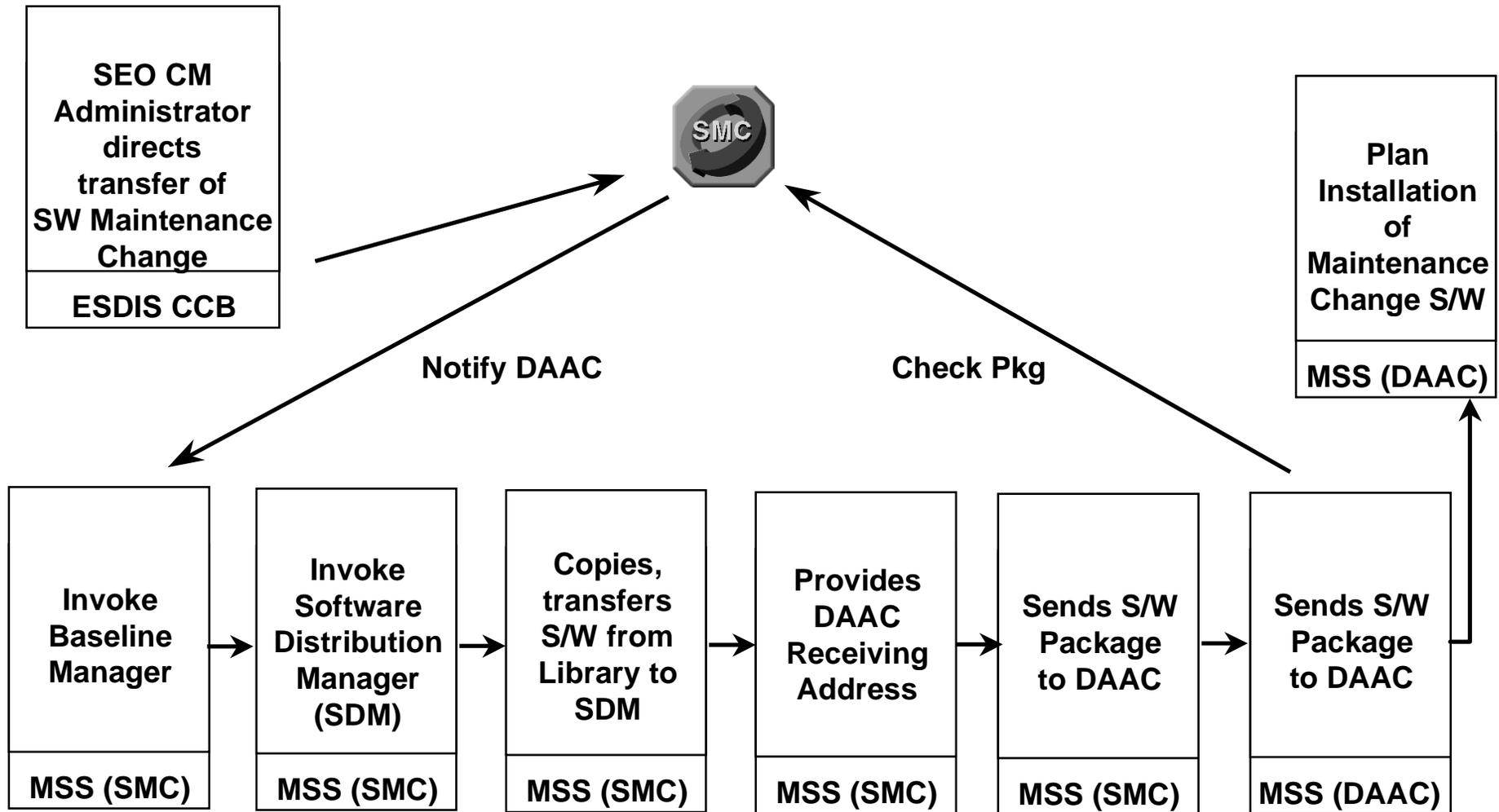
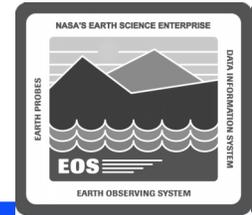
Date: _____

Software Baselines and Changes

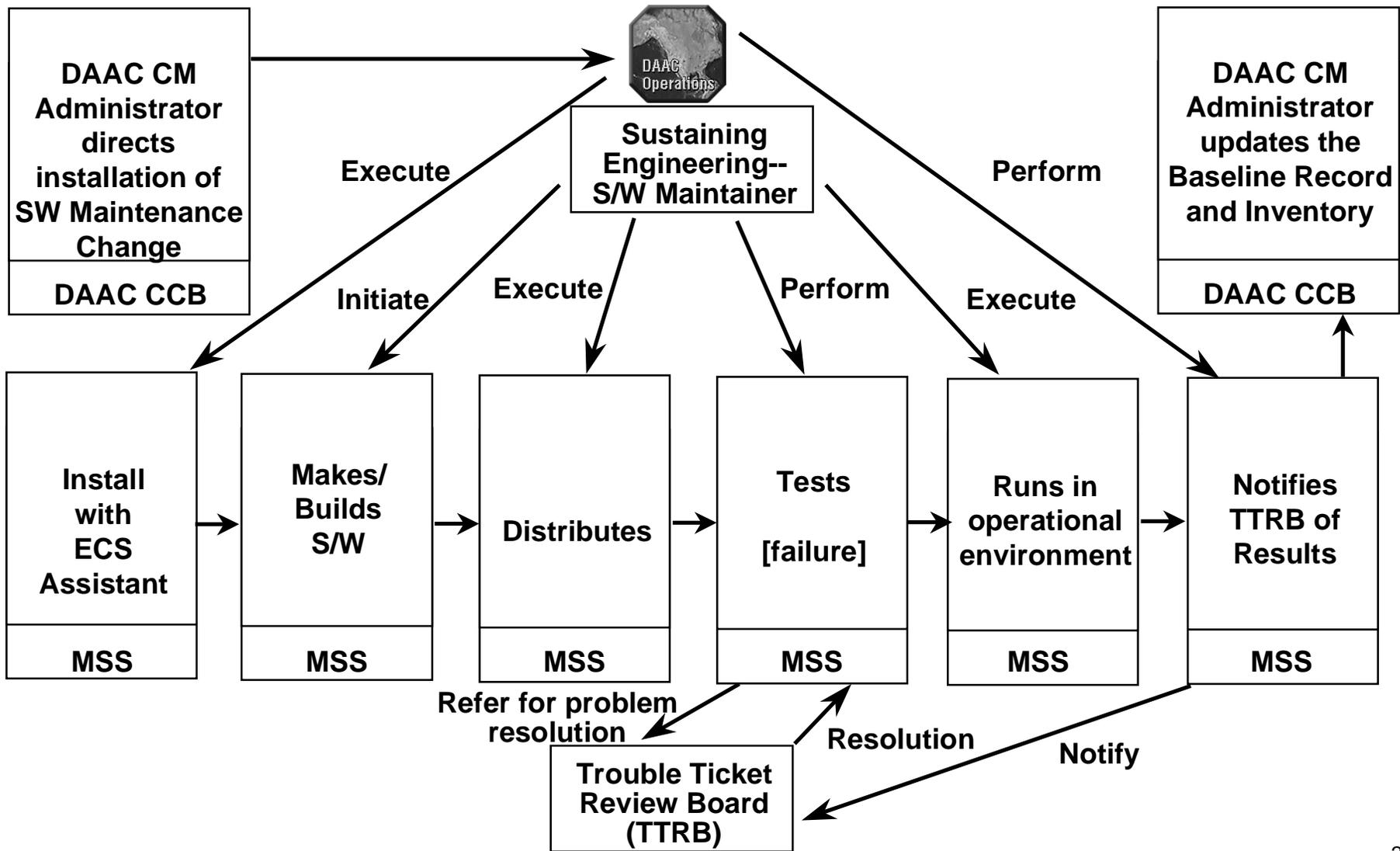
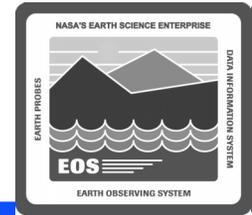


- **Software release is through ESDIS SMC or, with ESDIS permission, directly to the sites**
 - Version Description Document (VDD) provides summary documentation package
 - ECS Project CMO assembles and packages the delivery
- **Change Scenarios**
 - COTS software problem
 - custom software problem
 - science software upgrade
 - COTS software upgrade
 - system enhancement

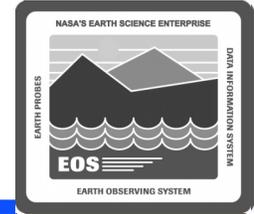
Software Transfer & Installation: Transfer Functional Flow



Software Transfer & Installation: Installation Functional Flow

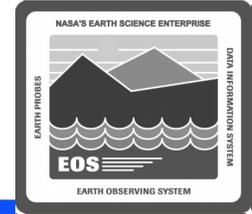


Software Transfer



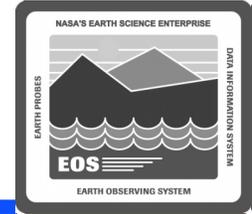
- **When software maintenance change package is ready and approved by ESDIS CCB, SEO CM Administrator requests SMC to distribute**
- **SMC CM Administrator promotes the change to the Operational Baseline and updates the Baseline Record and Inventory Record**

Software Change Installation



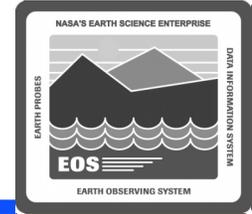
- **Review/approval by ESDIS precedes systematic installation**
 - **VDD final updates for system and center-specific material; final VDD is published**
 - **Installation of the build and operational and user documentation IAW installation schedule**
 - **ECS Assistant for installation**
 - **Scripts for System Administrator to do installation**
 - **Controlled document updates provided to SEO Document Maintenance and entered into CM**
 - **CM system updated to reflect M&O and center-specific baselines**

Software Change Installation (Cont.)



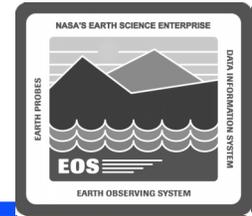
- **Implementation and test of software by DAAC Software Maintenance Engineer**
 - Tests individual packages (unit, subsystem, system)
 - Runs full final software in operational environment
 - Notifies SMC of results
- **DAAC CM Administrator updates site baseline record using Baseline Manager (BLM) tool**
 - DAAC CCR Number
 - Software package identification
 - Package name
 - Software upgrade name
 - Version
 - File structure
 - Type
 - Installation date

Configuration Parameters



- **Default settings may or may not be optimal for local operations**
- **Changing parameter settings**
 - May require coordination among Configuration Management Administrator, Database Administrator, and Operations personnel
 - Some parameters accessible on GUIs
 - Some parameters changed by editing configuration files
 - Some parameters stored in databases
- **Configuration Registry (Release 5B, 2nd delivery)**
 - Script loads values from configuration files
 - GUI for display and modification of parameters
 - Move (re-name) configuration files so ECS servers obtain needed parameters from Registry Server when starting

Configuration Registry



Database Login

User Id:

Password:

Server:

DB Name:

ECS REGISTRY (1.0)

File Utilities

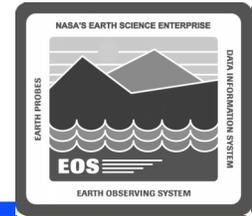
Attribute Tree Name: TS2_5B.01

Attribute Listing <75>

PseudoAttribute	One	Two	Three
Name	EcInGran		
ProgramID	5800000		
ApplicationID	5000000		
Site	vatc		
DeltaTime	3600		
MajorVersion	1		
MinorVersion	0		
Release	B		
SubSysName	INS		
AppLogSize	5000000		
AppLogLevel	0		
HostPolicy	multiple		
ServerDescription	This is ../subsys/ecs/server		
oid_EcInGranObj	80e4c765-7b28-1023-891b-080000000000		
oid_EcAgManager_TS2	80e4c766-7b28-1023-891b-080000000000		
ListenThreads	20		
Protocol	EMPTY		
KeyFile	CUSTOM/security/EcInGran.Keyf		
PrincipalName	EcInGran		
AcIPermission	x		
AcIDBTableName	IngestAcItable		
AcIName	InGranObj		
AppStrtNum	12345		
DBAcIKey	PfAcIKey		
DBLibrary	SYBASE_CT		
DBServer	t1mss07_srvr		
DBLoginName	acluser		

Attribute Information
Mapped To Mode: TS2

Configuration Registry (Cont.)



Attribute Information

Attribute Name: ListenThreads

Description:

Update Attribute Delete Attribute

Attribute Properties

Attribute Data Type: String

MIN: 0

MAX: 0

Update attribute properties

Configured Values

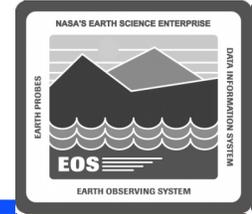
20

Change Comment:

Update Delete Create Properties

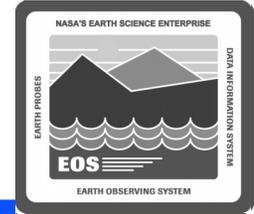
Ok Exit

Hardware Baselines and Changes



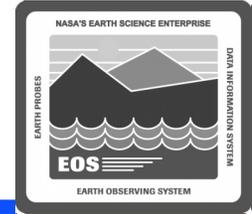
- **Hardware baseline established at Release Readiness Review (RRR) following formal Physical Configuration Audit (PCA) and Functional Configuration Audit (FCA)**
 - ESDIS approves establishment of operations baseline
 - Configuration baseline recorded in Engineering Release Record
 - M&O conducts testing of builds to ensure proper implementation of CCRs with no defects introduced
- **Change Scenarios**
 - COTS hardware problem repair that requires a CCR
 - System enhancement

Hardware Change Installation



- **Repair with part of same make, model, version does *not* require CCR**
- **Change in make, model, version of a part to be used for repair, e.g., in an emergency, necessitates CCR to document the change**
 - **Review/approval by site CCB**
 - **Review by SEO/ESDIS for impacts/applicability to other sites**
 - **Provision of controlled document updates to SEO Document Maintenance and entry into CM**
 - **CM system updates to reflect change**
 - **Audits (FCA/PCA)**

Changes to the Baseline



- **CM Tools for baseline changes**

- Change Request Manager: DDTS

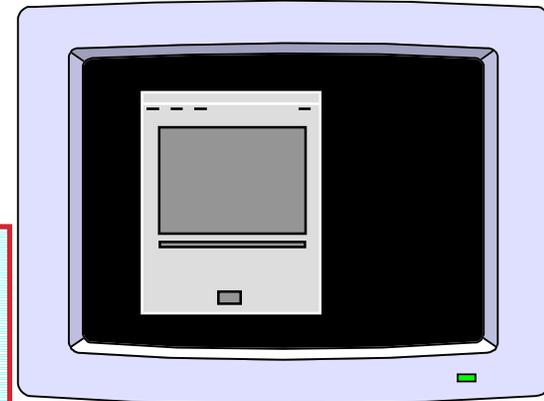
- Baseline Manager: XRP-II

- Inventory/Logistical Manager: XRP-II
Incomplete: Baseline Database may not be deployed; Inventory Database for information only

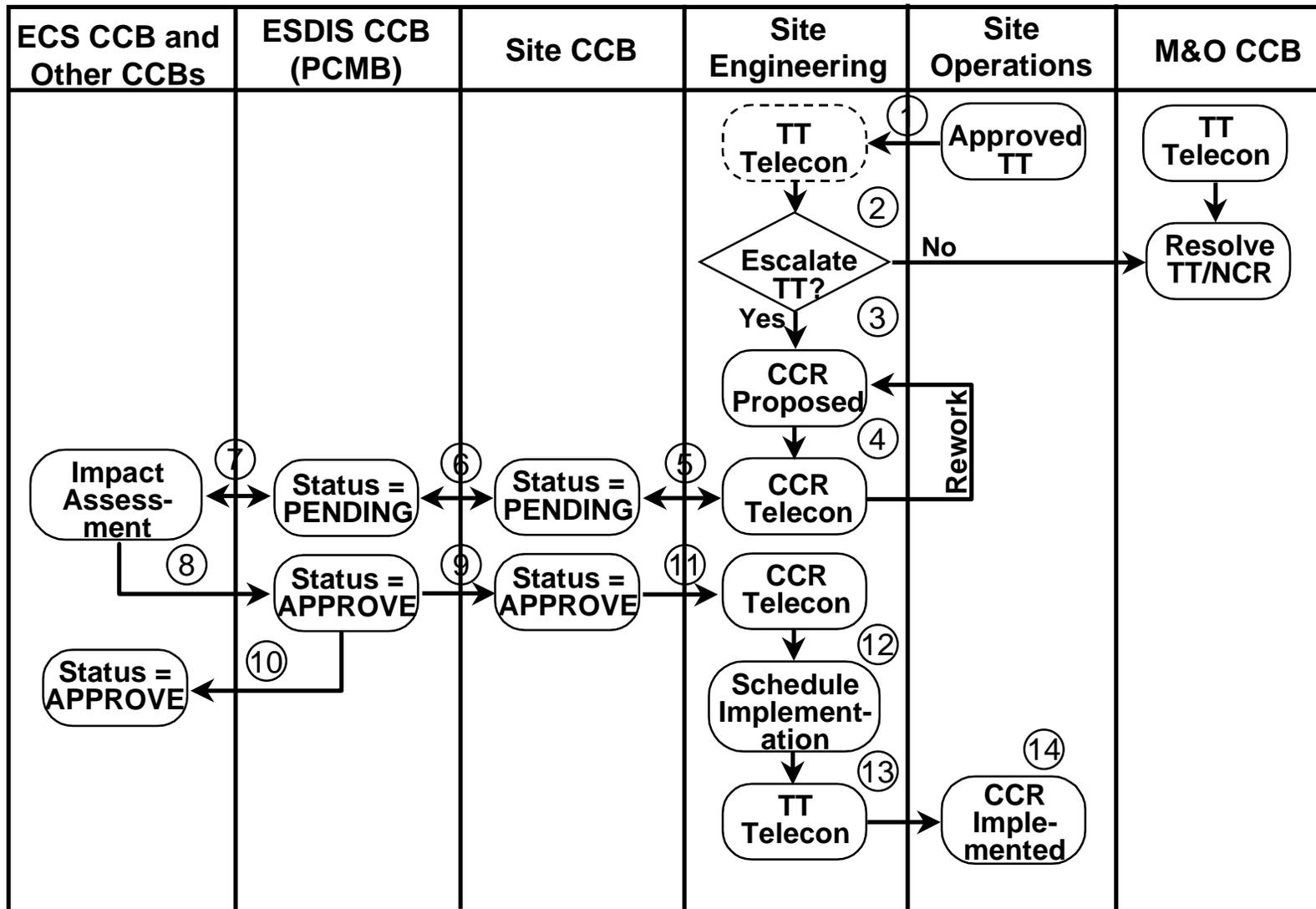
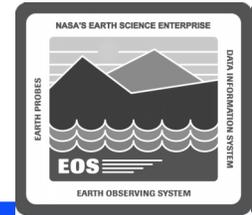
- **Related tools**

- From Management Subfunction software

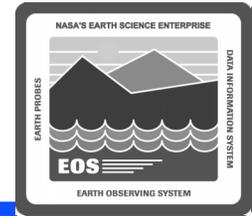
- Trouble Ticket System (TTS)
- Problem reporting and tracking
- Used by users, operators, system administrators



CCR Approval Flow

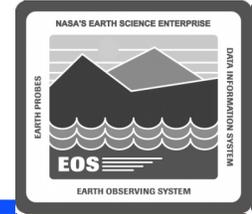


Baseline Terms and Concepts



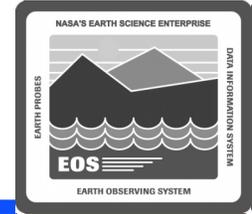
- ***Baseline Management*** is to identify and control baselined versions of hardware and software, and maintain a complete history of baseline changes
- ***Control Item*** is any ECS item under version control by CM
- ***Configuration Item (CI)*** is an aggregation of hardware, firmware, software, or any discrete component or portion, which satisfies an end user function and is designated for configuration control
- ***Baseline*** is a configuration identification document or set of such documents formally designated by the Government at a specific time in the life cycle of a CI
- ***Configured Article*** is a control item reportable as part of the Configured Articles List (CAL)

Baseline Terms and Concepts (Cont.)



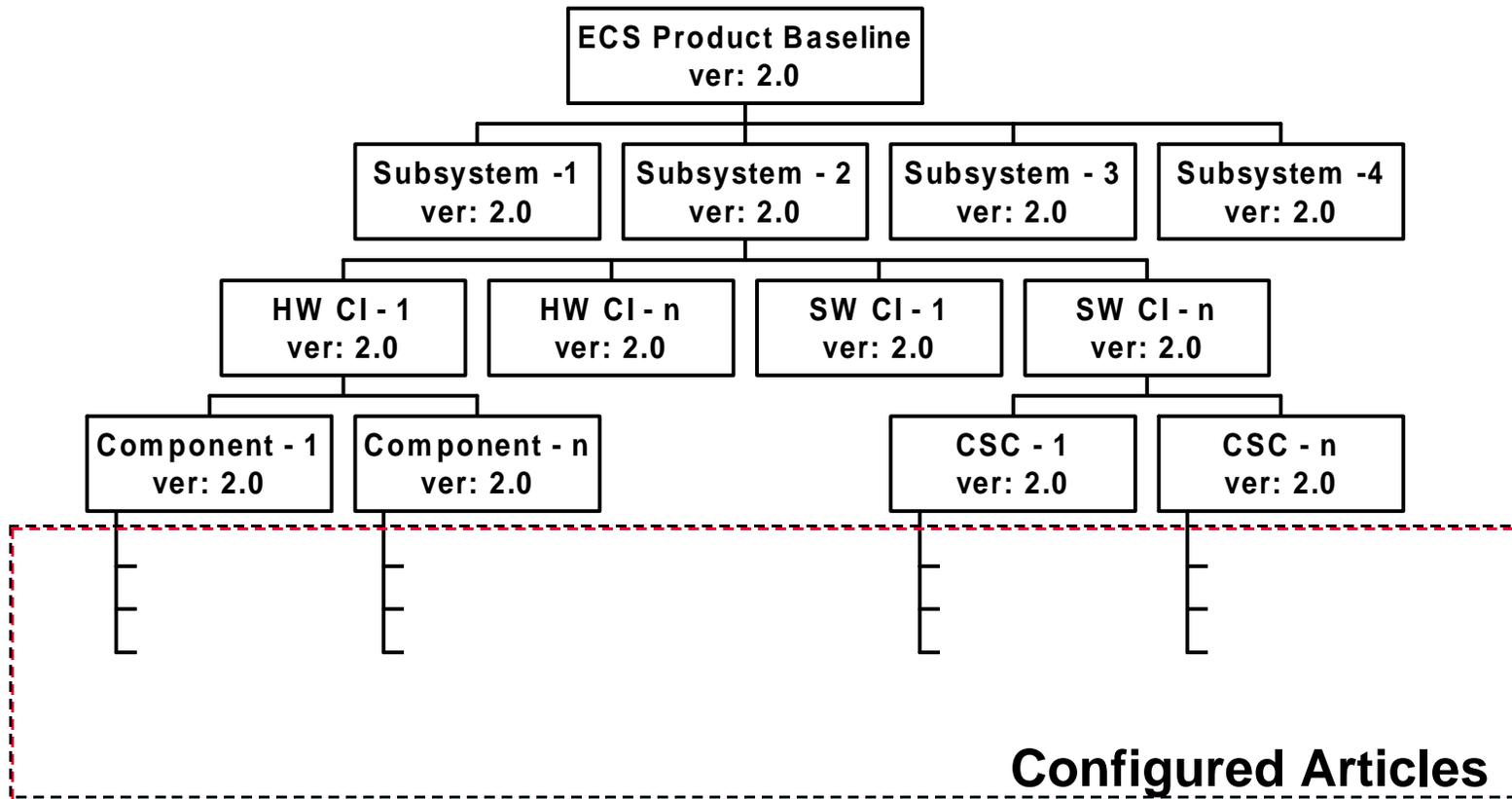
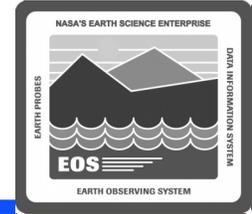
- **ECS Structure and Baseline Terms**
 - **Assembly:** an item made up of other items
 - **Parent:** a higher-level item (e.g., an assembly)
 - **Child:** an item that is a component of a higher-level item
 - **Bill of Material:** list of items that comprise an assembly
 - **Product Structure:** the parent-child pairings that define the bill of material for an assembly; each product structure record specifies the effective dates and quantities for a single component of a parent for each engineering change
 - **Active Date:** the date a component becomes effective in an assembly's bill of material
 - **Inactive Date:** the date a component is no longer effective in an assembly's bill of material

Baseline Terms and Concepts (Cont.)

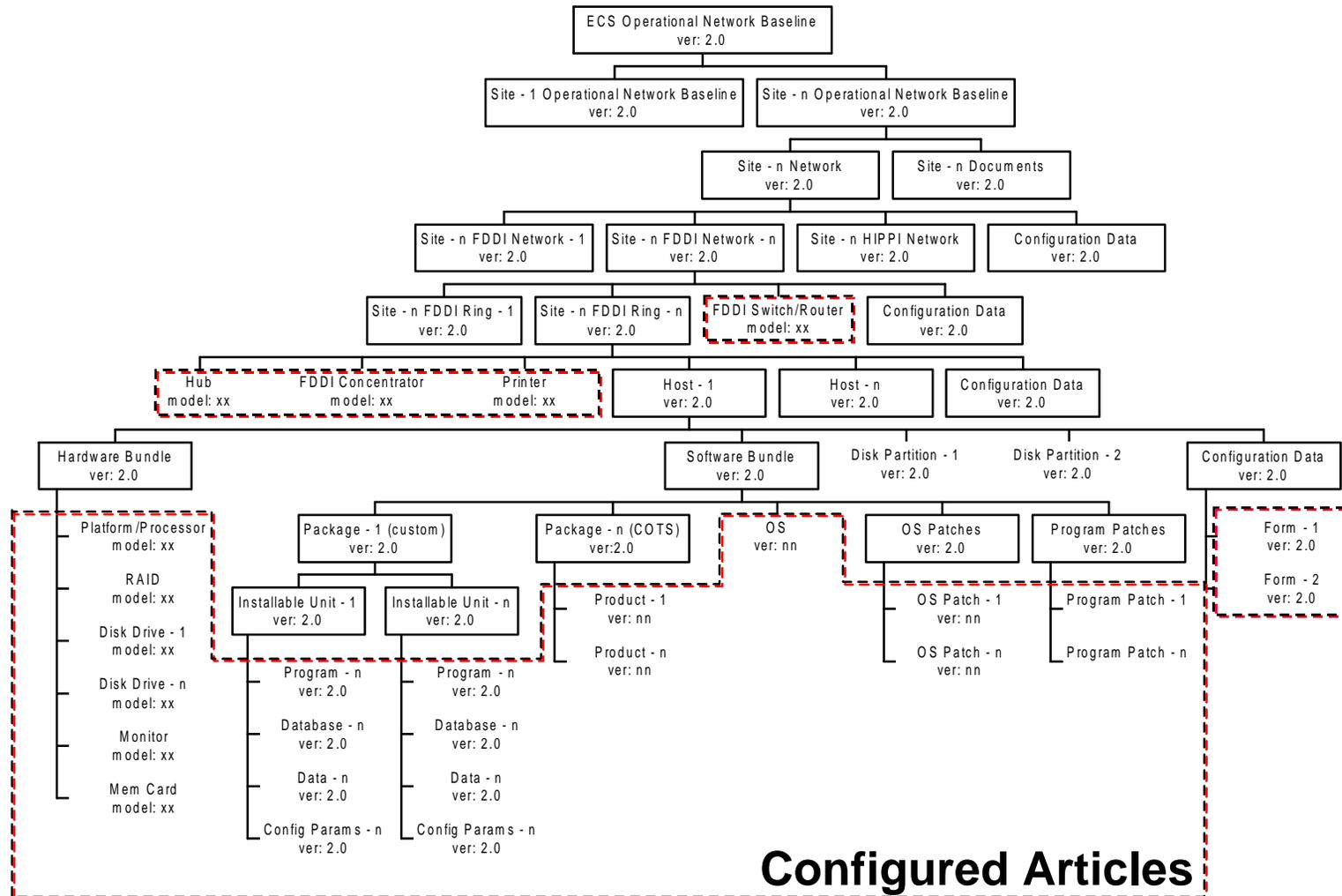
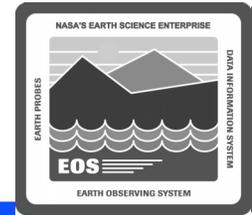


- **ECS Structure and Baseline Terms (Cont.)**
 - ***Engineering Change***: a mechanism for grouping, reporting, and controlling product changes collectively
 - ***Revision***: sequence number of a product structure change to an assembly; signifies a change to the configuration of an assembly that does not alter its form, fit, or function
 - ***Implementation Status***: a record describing the deployment of a control item to a site and the current state and associated date of its implementation; each control item has one record for each site to which it is deployed
 - ***Exporting Data***: creating a formatted file or records extracted from the BLM database; control item engineering change, product structure, and interdependency records may be extracted and sent to another BLM site via ftp
 - ***Importing Data***: loading BLM data from a formatted file

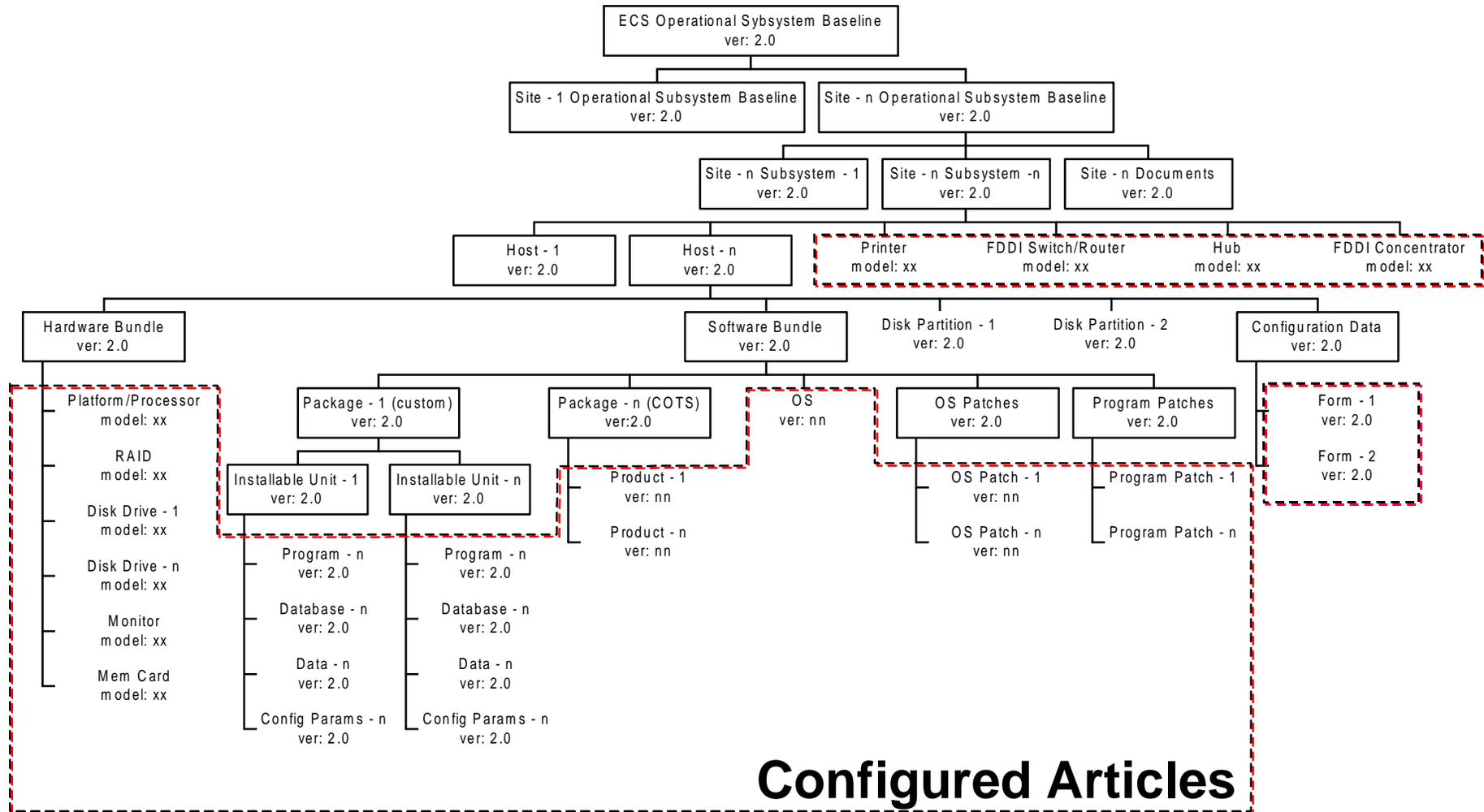
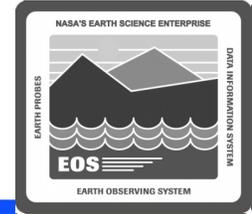
Product Structure - Design View



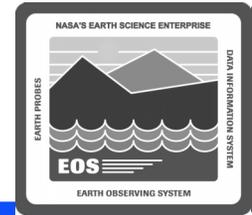
Product Structure - Operational (Network) View



Product Structure - Operational (Subsystem) View



XRP-II Main Screen



```
XRP-II - Baseline User
ECS Management System
Main Menu
07/17/2000 13:28

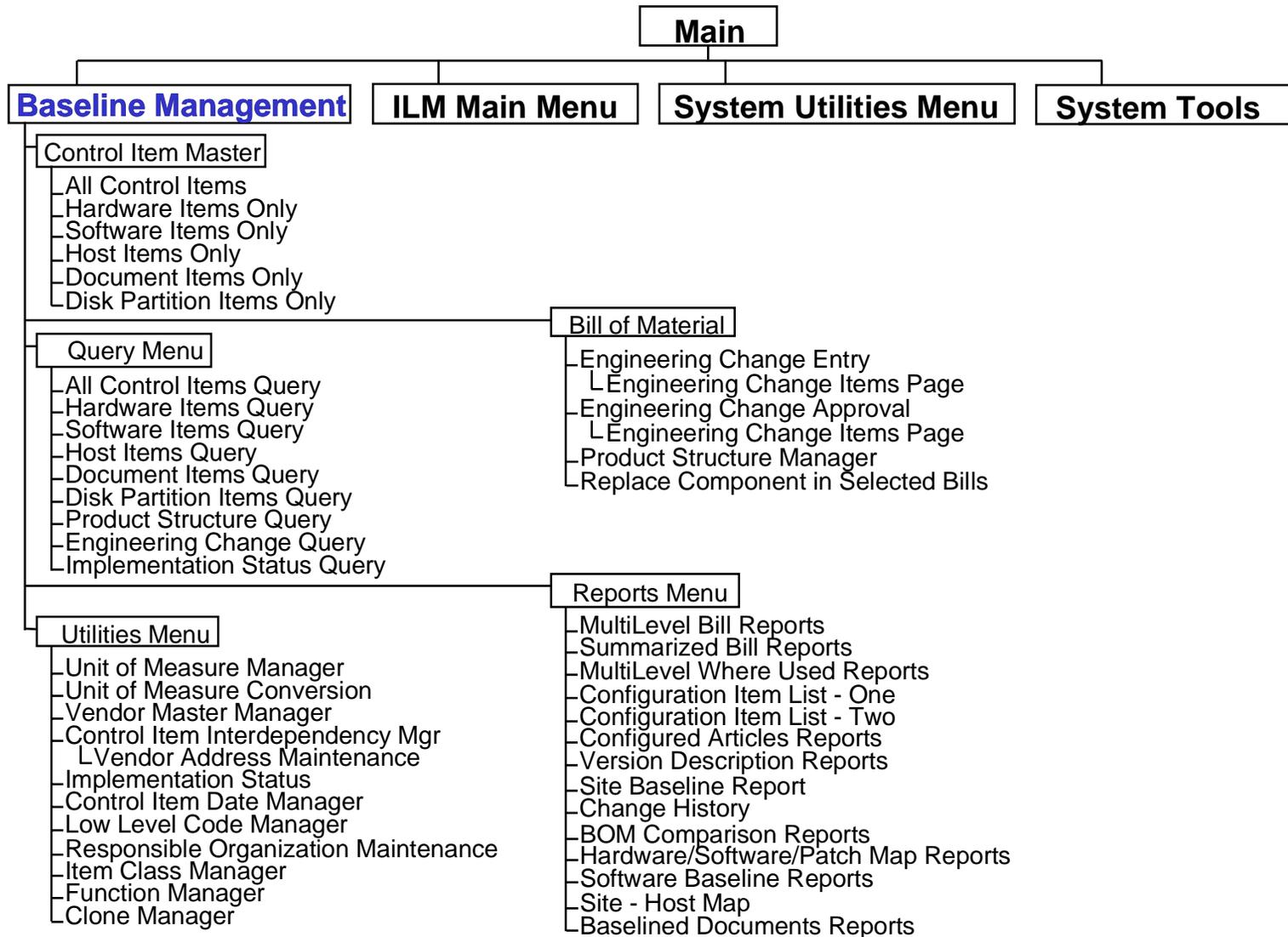
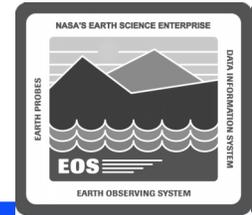
mainm

1. Baseline Management
2. ILM Main Menu
3. System Utilities Menu
4. System Tools

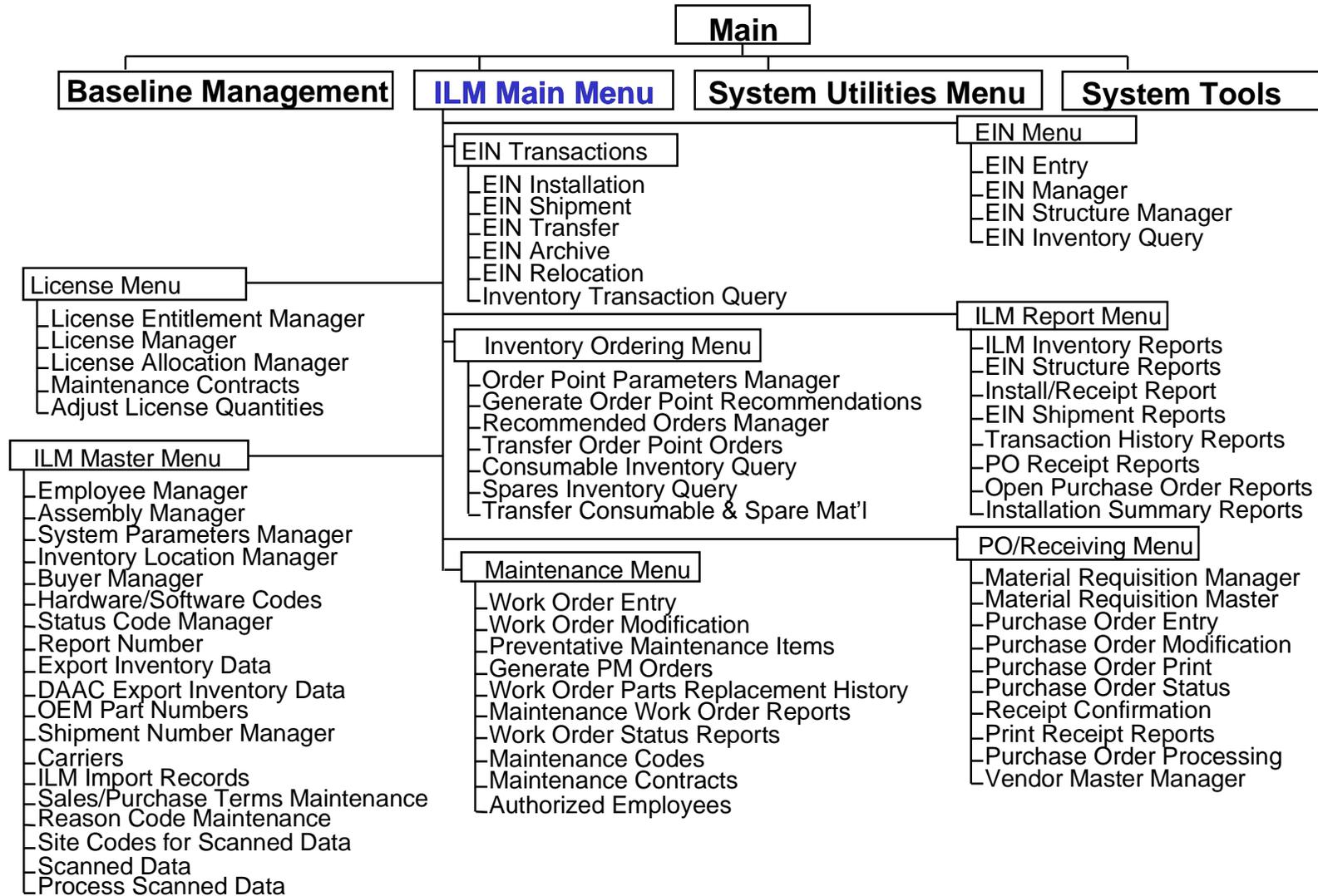
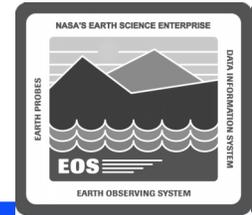
Please enter selection (1 - 4 or name): 

F1-help F3-prior menu F5-select F8-exit
```

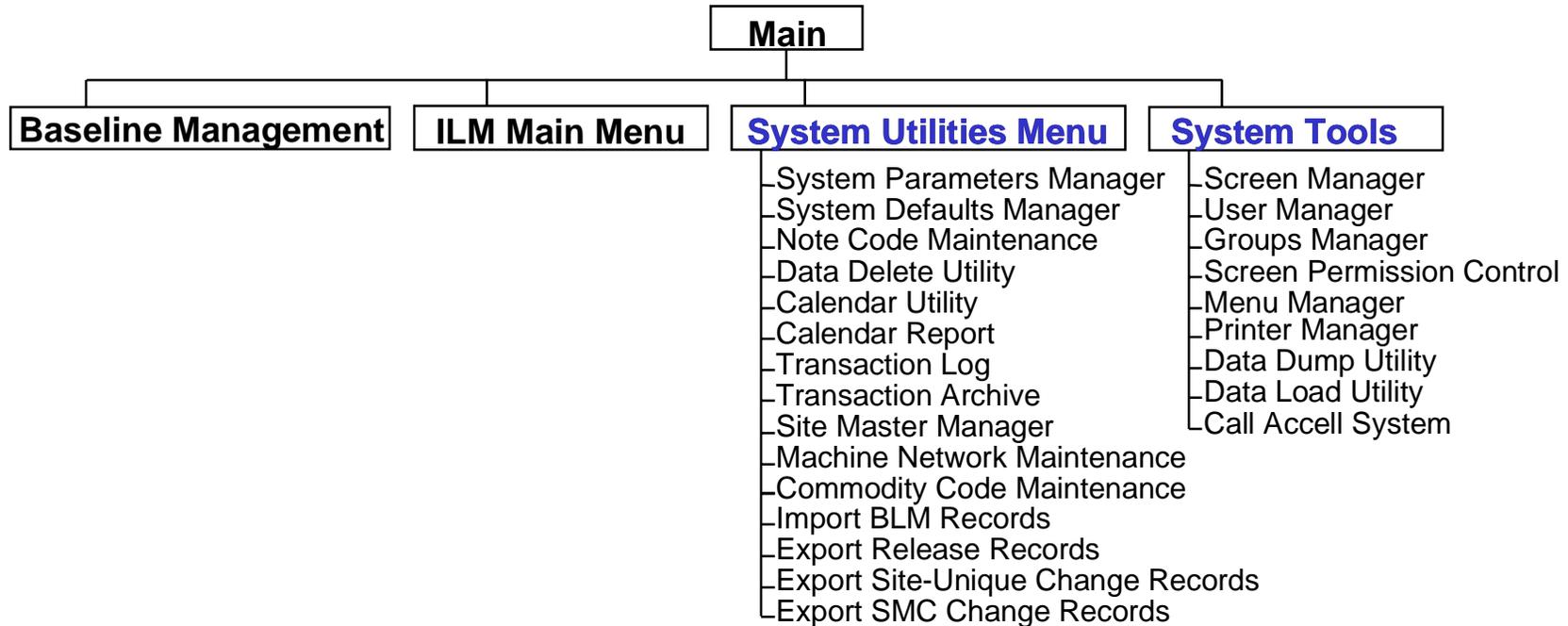
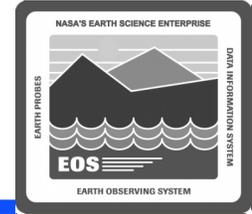
XRP-II Hierarchical Menu Structure



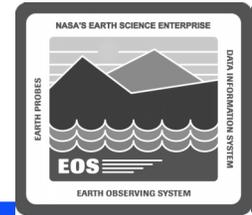
XRP-II Hierarchical Menu Structure (Cont.)



XRP-II Hierarchical Menu Structure (Cont.)



BLM Software Items Only CHUI



```

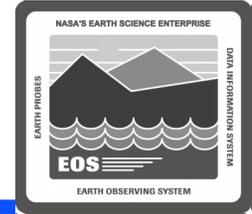
[piw] Software Items Only
[piw] SOFTWARE ITEMS ONLY: Last: 6385 Current: 1272

This screen selects only Software items. * - Required fields
Control Item Id: 00015790
NAME: Netscape Enterprise Server MNEMONIC:
DESCRIPTION: Netscape Enterprise Server, v2.02a, SUN
Item Class: software ITEM SUBCLASS: program
VERSION: 2.02a PRED ITEM:
OEM PART: -->>: To Inventory
OEM DESC:
Current Revision: 0 Highest Revision: 0
*CONFIG ARTICLE: Y *PLANNING RESOURCE: N
SOURCE CI: WKBCH FUNCTION: Internet Server
SCOPE: C IMPLEMENTATION STATUS: Zoom
DEVELOPER: NCC RESP ORG: CLS Zoom
COMMODITY CODE: COTS Subsystem:
APPLIC CAT: DROP NUMBER:

----- Details -----
VARIANT: SUN TCP/UDP PORT: 0
PRINCIPAL DIR: /usr/ecs/<mode>/COTS/ns-home
APPLICATION ID: PROGRAM ID:
LICENSE TYPE: TOTAL LICENSES: 0
INSTALL INST: CKSUM: PROJECT: ECS
COMMENT:
CODE: NOTE:
CODE: NOTE:
CODE: NOTE:

Next Prior View Find Go Select /Sort /Note Copypart Bom Where Ec Help More Quit
    
```

BLM Engineering Change



piboms Engineering Change Entry

[piboms] ENGINEERING CHANGE ENTRY: Last: 4 Current: 2

Parent Part: 00060486
Engineering Change: 99006

Name: FSMS Server (P1) H/W bundle Mod/Ver: 4PY
Variant: Source Ci:
Item Class: hardware Item Subclass: bundle, hardware
Mfr/dev: ECS Commodity Code:

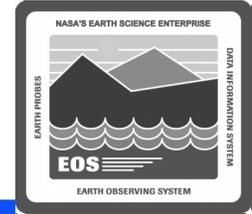
PROJECT: ECS
Approval Code: E Approval Date: 03/12/99
CCR #:
TROUBLE TICKET:
SORT ORDER: R [P=part R=reference S=sort #]
DRAWING: REVISION: 0
IMPLEMENTATION CODE:
BASELINE / RELEASE:

Active Date: 12/31/19
Inactive Date: **/**/**

Date Entered: 03/12/99 Operator Id: xrpadm

Next Prior View Find Go Select /Sort /Note Copy-dates Items Help More Quit /Zoom

ILM EIN Entry & Manager Screens



```

einent] EIN ENTRY:                               Last: 1 Current: 1

      EIN: 00018018
      ECS NAME: IN STOCK                          SUFFIX:
      SERIAL NUMBER: 4035A01846                  HOST ID:
      OEM PART NUMBER: 900128-01
      OEM DESCRIPTION: Keyboard
      HDWSFT CODE: H
      MOD/VER:                                     MFG: SGI
      VENDOR: SGI                                MANF YEAR: 2000
      SOFTWARE LIC NUM:                          RECEIVE DATE: 03/10/97
      MAINT VENDOR: SGI                         MAINT CONTRACT: CCN4581
      Tran Code: 03                             STATUS CODE: R
      NASA CONTRACT: NAS5-60000                 RELEASE CODE:
      PO NUMBER: CCH0005817                     UNIT COST: 0.00
      LOCATION: EDC                             BUILDING: EROS-D
      ROOM: COM 2                               USER: 205
      AUDIT DATE: **/**/**                      GFE NUM:
      CONTROL ITEM ID:                          RMA #:
      WARRANTY EXP DATE: 12/31/98
  
```

Next Prior View Find Go Select /Sort /Note Copyein Bom

```

einmnt] EIN Manager (EDF):                       Last: 34252 Current: 2067

      EIN: 00002343
      ECS NAME: n0mss02                          SUFFIX:
      SERIAL NUMBER: 709F116C                  HOST ID:
      OEM PART NUMBER: A14-UCB1-9S-128EB
      OEM DESCRIPTION: Ultra Server 2 Model 1200 200 MHZ
      HDWSFT CODE: H
      MFG: SUN                                  ECS PART ALIAS:
      MODEL/VERSION: 1200                       RESP ORG:
      VENDOR: SUN                               MANF YEAR: 1996
      SOFTWARE LIC NUM:                          RECEIVE DATE: 03/10/97
      MAINT VENDOR: SUN                         MAINT CONTRACT: CCM7019
      WARRANTY EXP DATE: 12/31/98               STATUS CODE: T
      NASA CONTRACT: NAS5-60000                 RELEASE CODE:
      PO Number: CCM0006714                     UNIT COST: 0.00
      Tran Code: 03                             INSTALLATION DATE: 12/06/99
      LOCATION: GSFC                            BUILDING: 32
      ROOM:                                     USER: 167
      AUDIT DATE: 01/27/99                       GFE NUM: (NASA ECN)
      CONTROL ITEM ID:                          RMA #:
      Report Number: 1094 C                     Shipping Report Number: 0
      COMMENT:
      CODE:
      NOTE:
  
```

Next Prior View Find Go Select /Sort /Note Copyein Bom Where Help More Quit