

Overview  
Of  
The National Configuration Management Function

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## **National Configuration Management Function**

### **Introduction**

This document provides an overview of the National Configuration Management (NCM) function. Its primary goal is to inform and provide guidance to the Bureau on those types of investments that need to be managed through the NCM process. It also establishes new submission requirements and provides the functional layout. Additional guidance on processes, function, and structure will be published this fiscal year.

### **What is Configuration Management (CM)?**

It is one of the five “key process areas “ in improving the Bureau of Land Management’s (BLM’s) Information Technology (IT) investment management process as defined by the Software Engineering Institute’s Capability Maturity Model and it is essential for bringing the needed accountability to the Bureau’s investments. Although CM is essentially change management, it is a process that allows us to design, produce, deliver, operate and maintain the BLM information systems, software, hardware and services. It is also the process that allows us to evaluate and implement changes, assure traceability and compatibility throughout an investments life cycle.

### **How will CM be different in the future?**

Best practices in CM indicate that CM should not be used as a mechanism for acquiring a system, software or hardware product. In the newly realigned IRM organization, the acquisition decisions rest with the Chief Information Officer, State/Center Chief Information Officers, the National Information Technology Investment Board (ITIB) or the State/Center ITIB. CM will involve processes that address both technical and administrative functions to ensure that they remain connected to the requirements within the software/application development or the hardware life cycles. It will become the process we use to verify, monitor, identify, and track changes to the national hardware and software baselines.

CM will now be organized into three areas: Software Configuration Management (SCM), Hardware Configuration Management (HCM) and Acquisition Software and Hardware Configuration Management (ASHCM). Each area has a specific purpose and collectively they make up the CM discipline as implemented within the Bureau. CM Specialists will begin receiving training in these areas over the upcoming year.

The purpose of SCM is to establish and maintain the integrity of the products of the software project throughout the project’s software life cycle. It is an integral part of most engineering and management processes. It covers in-house and external application development and custom Commercial Off-the-Shelf (COTS) enhancements. New SCM investments depending on life cycle cost require National or State/Center ITIB approval. Changes to existing SCM investments will require approvals from the sponsor, project manager and the local CM specialist. They generally are associated with patch releases. They also require test plans and Request for Change Proposals (RCPs).

Next, the purpose of HCM is to maintain the integrity of the Bureau's IT investments consisting of desktops, servers, routers, radios and other hardware with their corresponding operating systems, firmware and/or accessories. NCM will no longer maintain a listing of desired hardware by model number, vendor name, or serial number. Instead it will maintain a minimum specifications list by date and it will list existing or planned Blanket Purchase Agreements (BPAs), that BLM employees may use to procure needed hardware. Minor changes to existing HCM investments like an operating system patch will require approvals from the project manager and sponsor or system owner.

Finally, the purpose of ASHCM is to ensure that contracts for applications, systems, and/or hardware includes language that clearly states deliverables in the form of system specifications, system pilots, functionality, interoperability and integration testing, manuals, etc. Now, ASHCM will address any new IT investment. Specific guidance for proposing an IT investment can be found in Washington Office Instruction Memorandum 2000-187. It will include major changes like an operating system upgrade to existing HCM investments. This type of investment will require approvals from the sponsor and the project manager and it will be coordinated through System Coordination Office (SCO), Investment Management Group (IMG), and the Chief Information Officer (CIO) review process prior to submission to the ITIB for decision.

<b>Investment Control Process</b>			
Investment	Process	Required <sup>1</sup> Approvals	Documents Needed for NCM
Lotus Notes 5.04a to Lotus Notes 5.05	SCM	Sponsor/Project Manager	RCP and test plan
Windows NT 4.0 Service Patch 5 to Service Patch 6	HCM	Sponsor/Project Manager	RCP and test plan
New OA Suite	ASHCM	ITIB	Business Case, RCP, test plan
New Client Server Technology or a Minicomputer	ASHCM	ITIB	Business Case, RCP, test plan

1. The highest level of approval needed, it does not represent the signature chain.

### **National Staffing (Roles and Responsibilities)**

The National CM function will be staffed with a CM librarian, a CM specialist, a CM administrator accountable to the Group Manager, IMG, and a National Configuration Control Board (NCCB) accountable to the CIO. It will also be supported by the National Information Resources Management Center (NIRMC) Systems Engineering accountable to the NIRMC Director.

The National CM Librarian's role is to label, track, and control all items/documents under the NCM. The librarian is also responsible for attending meetings and keeping the minutes. The

National CM Specialist (NCMS) is responsible for assuring that configuration principles and guidelines are applied to acquisitions, application development, COTS deployment and maintenance of existing systems and platforms. Moreover, the NCMS is responsible for managing all minor changes to the national baseline. The NCMS issues technical approvals or disapprovals of patches to systems based on National Test Lab results. Minor changes include bug fixes and patches. The NCMS is also responsible for assuring that uniform CM training is delivered to all Bureau CM specialists and other essential staff that support the CM effort. The National Configuration Management Administrator (NCMA) is responsible for WEB page oversight, database management and serves as backup to the NCMS

The NCCB is responsible for managing all major changes to the national baseline. The NCCB ensures that technical solutions comply with existing Bureau policies and that those technical solutions work within the existing approved baselined environment. The NCMS is a member of the NCCB. Other members include a State Chief Information Officer representative, Bureau IT Security Officer, Bureau Data Administrator, and a Quality Assurance (QA) Specialist. Major changes to the baseline include new product releases and investments under the direction of the CIO and the ITIB.

NIRMC Systems Engineering is responsible for integration, interoperability, and system performance testing. They will also oversee the testing of changes to the architecture of national systems. They oversee and manage the National Test Lab. System or project owners are responsible for identifying and providing testers for their systems through the test plan. These testers will be responsible for acceptance, usability, regression and system (functionality) testing. Meanwhile, NIRMC is also responsible for disposition of software and its corresponding documentation.

### **Establishing Priorities**

The National CM Specialist reviews project plans and/or decision documents to schedule tests through the National Test Lab. When a conflict in a schedule arises the NCMS will contact the affected parties to reach a decision. If a decision cannot be reached, it will be elevated to the CIO or his/her designated representative for resolution. Systems are ranked on the following scale: (1) BLM National Systems (2); Departmental Systems (3), Multi-use State Systems (4), and State-wide systems. Scheduling priorities will be assigned based on the business need as outlined in the decision documents.

### **Submission Requirements**

Any application and/or system (IT investment) having Bureauwide impact must be submitted through the NCM process. This covers all new projects under the System Coordination Office and investments that impact multiple States/Centers outside of their jurisdiction. Impact is defined by where users reside. Moreover, project managers and/or system owners must be identified for each investment. Project managers or system owners are responsible for submitting requests to the NCM. Your submission package may be sent electronically to the address below:

[NCM@blm.gov](mailto:NCM@blm.gov) with a hard copy sent to:  
 National Configuration Management  
 Bureau of Land Management  
 1849 C Street N.W. (LS - Room 725)  
 Washington, D.C. 20240

Instructions for completing the RCP and test plans will be posted on the CM home page referenced earlier in this document. Any incomplete submission will be returned to the requester (project manager or sponsor) for resolution. No waivers will be granted for submission requirements.

<b>Submission Package</b>	
<b>Type of Document</b>	<b>Purpose</b>
<b>RCP</b>	To modify the national baseline. It could generate an, addition, modification or removal. They document the type of request such as a patch, bug fix, new product release, upgrade or retirement of existing software/hardware.
<b>Test plans</b>	To identify testers, types of test and determine the impact on the existing national baseline.
<b>Decision documents</b>	To plan, schedule, and prioritize the investment through the National Test Lab. For projects under the direction of SCO, the Business Case Document is required; however, system owners or project managers may use the BLM decision document format for existing investments that do not fall under SCO's jurisdiction. Design documents should always be apart of the business case or decision document.

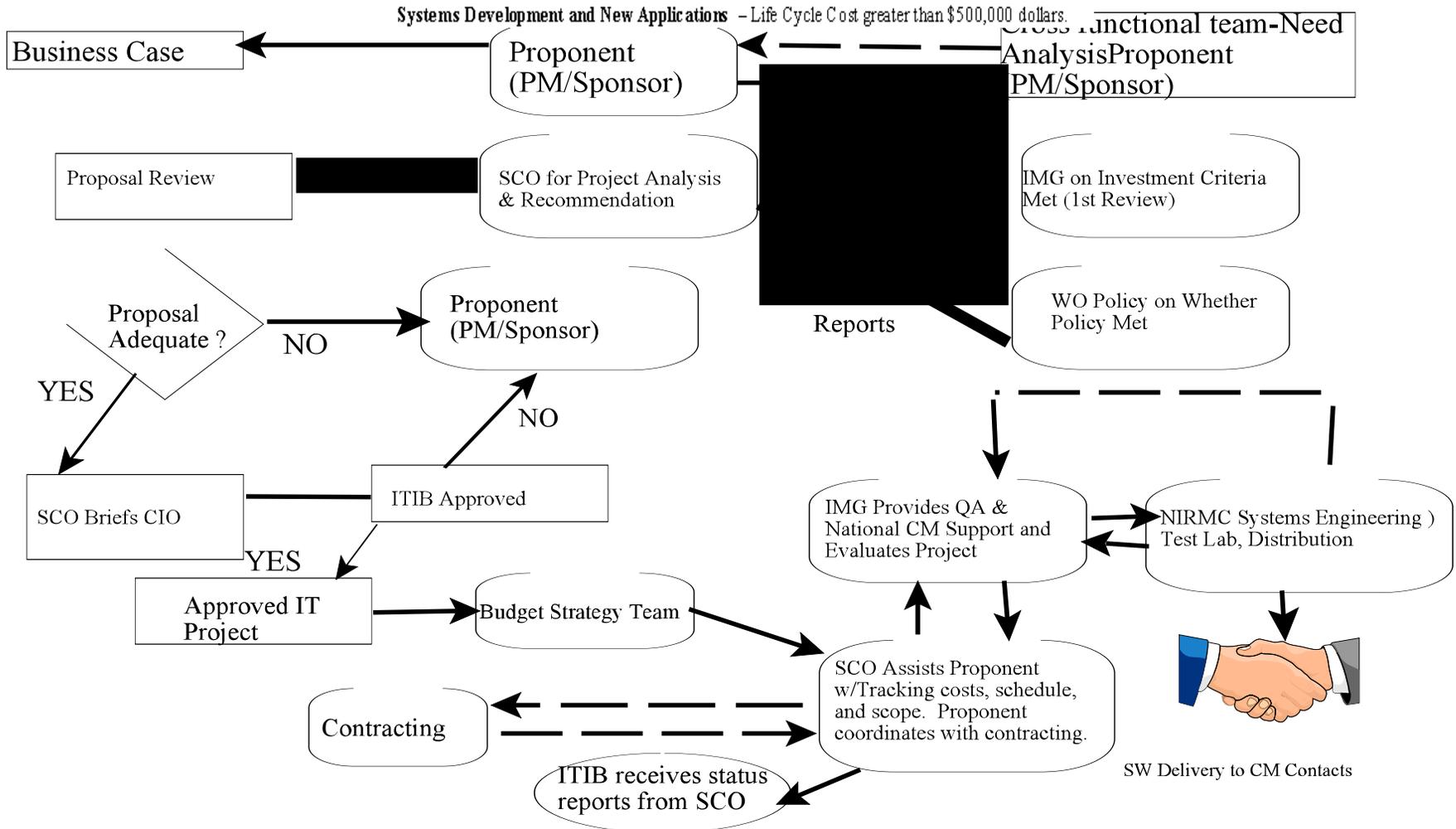
**Overview of  
Software Configuration Management (SCM)  
And  
Hardware Configuration Management (HCM)**

**Workflow Diagrams**

**Systems Development and New Applications** – Life Cycle Costs Greater than \$500,000 dollars.

1. Project sponsors or managers must develop a business case to submit to the SCO for review.
2. The SCO works with the IRM Investment Management Group on the review.
3. SCO with project manager, system owner and/or sponsor presents to the ITIB for approval.
4. ITIB approves the expenditure and forwards the project to the Budget Strategy Team.
5. The Budget Strategy team allocates the funding and forwards it to the sponsor.
6. The sponsor/project manager forwards project to the National Configuration Librarian (NCL) who labels the configuration items.
7. NCL sends items to Systems Engineering for testing. Once Systems Engineering completes testing, they submit the configuration to the NCL.
8. The NCM librarian logs in the configuration items, notifies the NCM specialist to bring the item before the NCCB
9. Once the NCCB approves the technical configuration, the NCL notifies the sponsor/project manager.
10. The sponsor/project manager works with contracting to acquire software, licenses, etcetera.
11. Once the product is acquired, the sponsor forwards master to NCL and NCL signs out the master copy to NIRMC for disposition.

# Overview of Software Configuration Management (SCM) And Hardware Configuration Management (HCM)

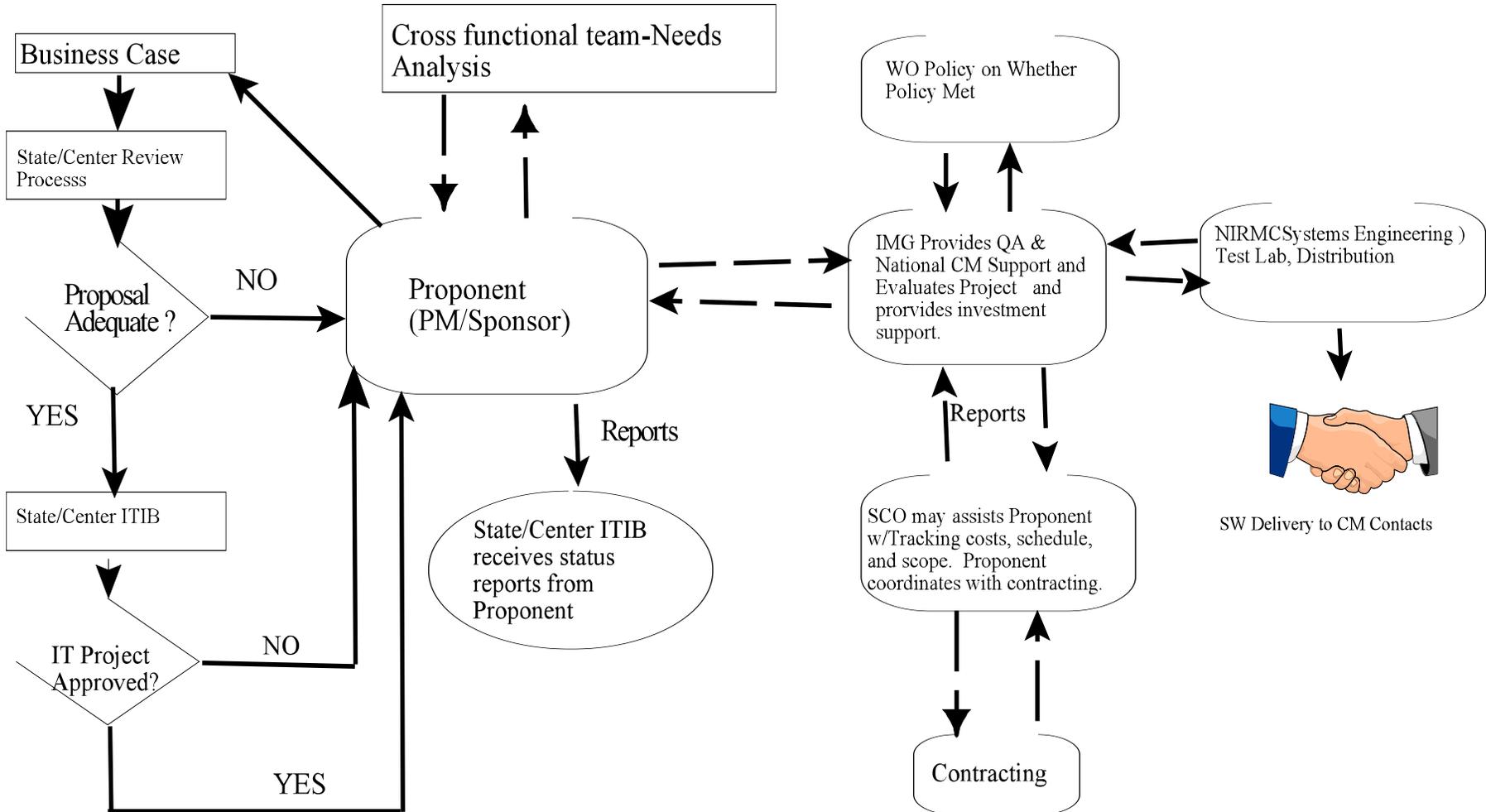


**Overview of  
Software Configuration Management (SCM)  
And  
Hardware Configuration Management (HCM)**

**Systems Development and New Applications - Life Cycle Cost Less than \$500,000.**

1. Project sponsors or managers submits modified business case document to their State/Center ITIB for approval.
2. Once approval is given the documents are forwarded to the Investment Management Group (IMG) for review.
3. IMG coordinates with SCO and sponsor ensuring that all authorizations are in place.
4. IMG forwards the IT investment to the National Configuration Librarian (NCL) who labels the product.
5. NCL forwards items to Systems Engineering for testing.
6. Once Systems Engineering completes testing, they submit the configuration to the NCL.
7. The CM librarian logs in the configuration items, notifies the CM to bring the item before the NCCB.
8. Once the NCCB approves the technical configuration, the NCL notifies the sponsor/project manager.
9. The sponsor/project manager works with contracting to acquire software, licenses, etcetera.
10. Once product is acquired, sponsor forwards master to NCL and NCL signs out the master copy to NIRMC for disposition.

# Overview of Software Configuration Management (SCM) And Hardware Configuration Management (HCM)



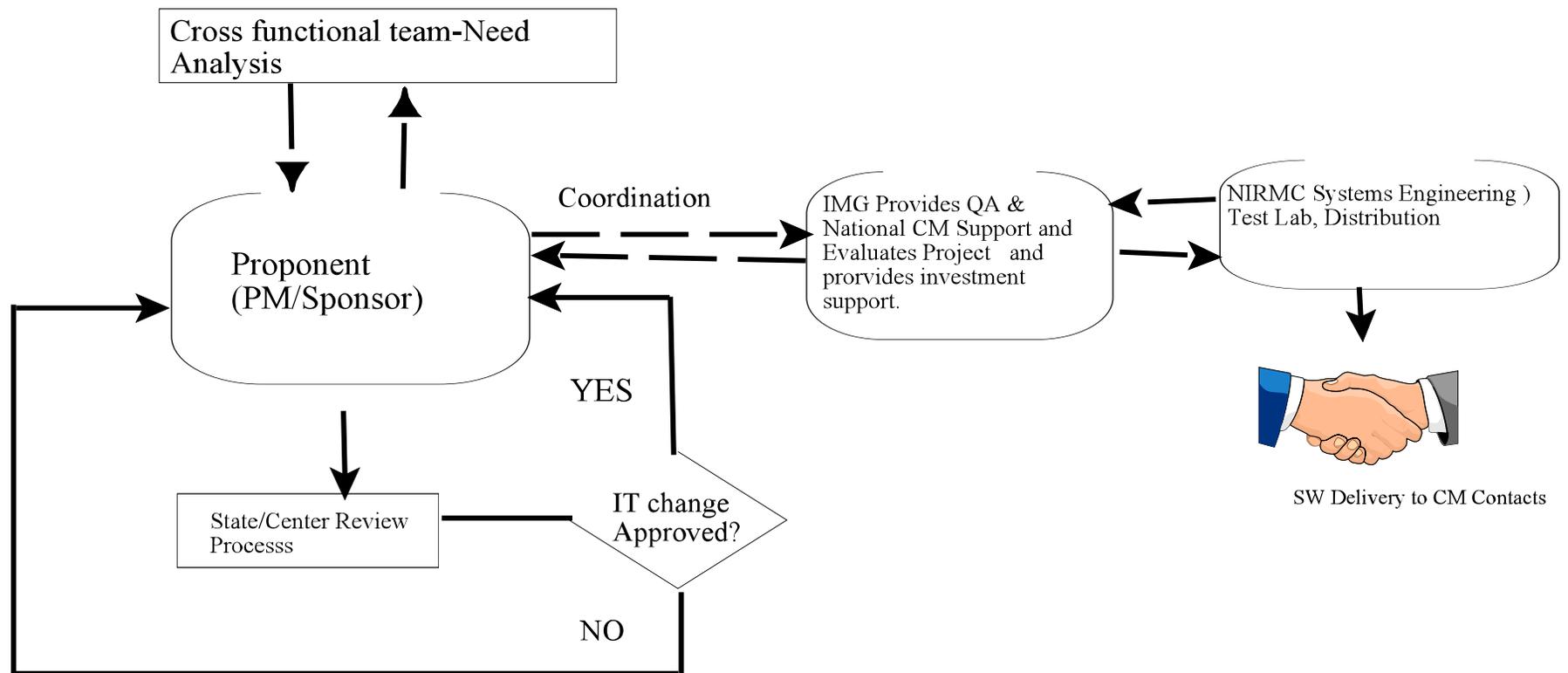
**Overview of  
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**Maintenance of Application/Software Releases (These items are a part of the Information Technology Capital Acquisition Fund (ITCAF) and documented in annual work plans)**

Project sponsor or project manager submits Request for Change Proposal (RCP) and test plan to the NCL.

1. NCL forwards items to Systems Engineering for testing.
2. Once Systems Engineering completes testing, they submit the configuration to the NCL.
3. The CM librarian logs in the investment, notifies the national CM specialist.
4. Once the national configuration management specialist approves the technical configuration, the NCL notifies the sponsor/project manager.
5. The NCL signs out the master copy to NIRMC for disposition

**Overview of  
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And  
Hardware Configuration Management (HCM)**



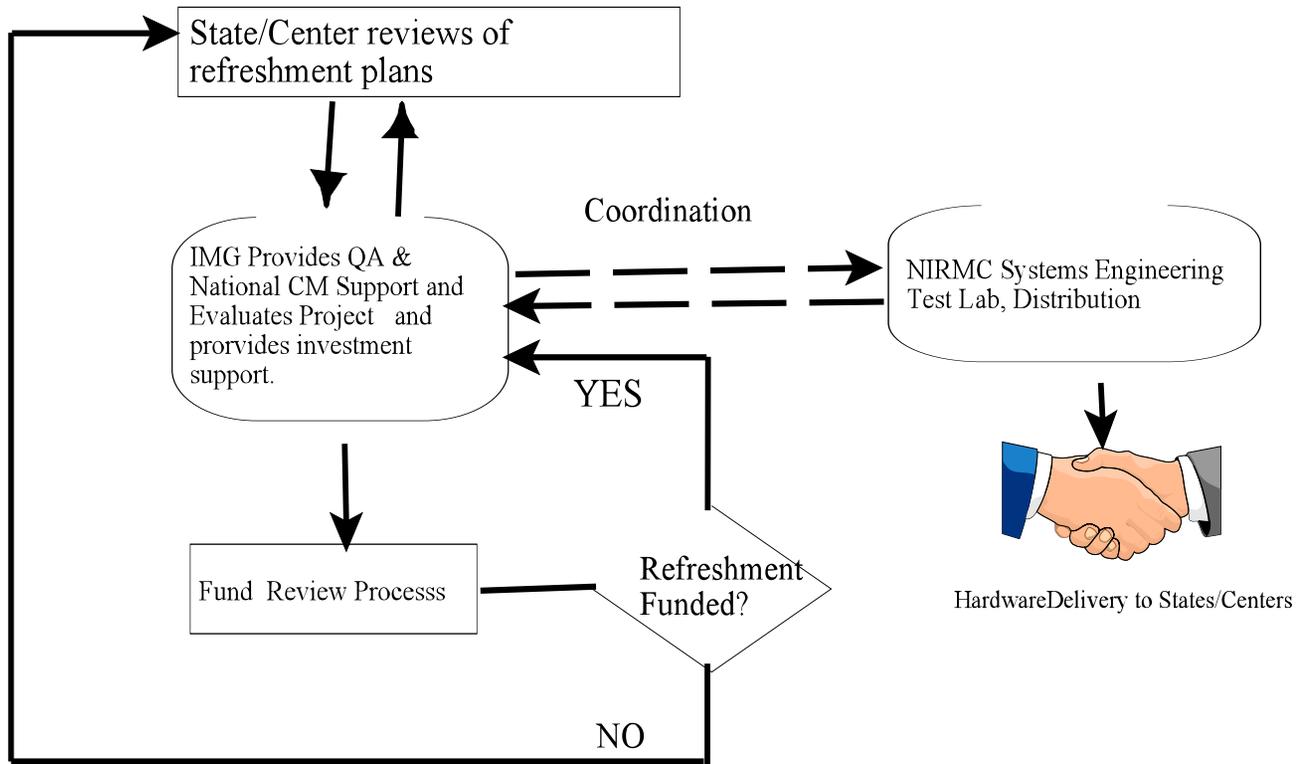
**Overview of  
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**Consolidated Purchases of Hardware Assets** – Life Cycle Costs greater than \$500,000 dollars or less than \$500,000.

1. Project sponsors or managers must develop a business case to submit to the System Coordination Office (SCO) for review.
2. The Investment Group works with the sponsor, the ITIB or the ITCAF.
3. IMG works with Systems Engineering for testing. Once Systems Engineering completes testing, they submit the configuration to the NCL.
4. NCL posts the approved configuration.
5. IMG works with NIRMC and contracting to acquire hardware.
6. national baseline.
7. IMG works with sponsor to submit the investment to NIRMC for disposition.

**Consolidated Purchases of Hardware Assets – Life Cycle Costs greater than \$500,000 dollars or less than \$500,000.**

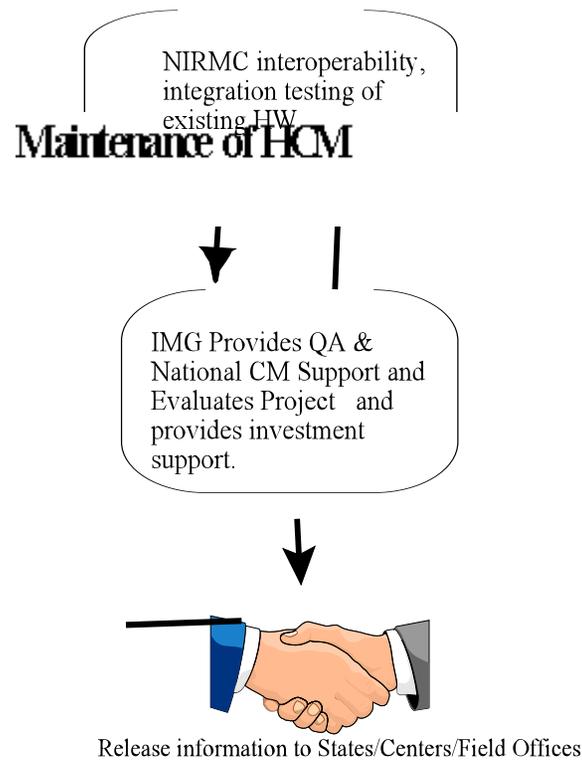
**Hardware Configuration Management (HCM)**



**Overview of  
Software Configuration Management (SCM)  
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Hardware Configuration Management (HCM)**

**Maintenance of HCM**

1. Systems Engineering generates test plans to test out hardware platforms against approved software baselines.
2. Systems Engineering evaluates hardware platforms and forwards recommendations to NCL for technical approval to the baseline.
3. The CM librarian verifies the logs for the configuration items, updates them as appropriate and notifies the NCMS for release of the information to the national baseline.



**Overview of  
Software Configuration Management (SCM)  
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**Internal National Configuration Management Work Process**

1. Project manager or sponsor submits RCP, test plans and/or business case documents to the NCL/NCMS.
2. NCMS decides if product can be fast tracked or needs to go to NCCB
3. NCMS develops a master schedule of all products in NCM informing all affected parties.
4. NCMS prioritizes investments to the National Test Lab based on project schedules submitted by the project manager in their business case document.
5. NCMS coordinates schedule with all project managers. If a conflict arises that cannot be resolved by affected parties, it is elevated to the CIO for resolution.
6. NCMA/NCL or NCMS creates Engineering Change Proposals and forwards package to National Test Lab.
7. National test lab conducts integration and interoperability testing.
8. National test lab creates Version Description Document and Engineering Release Record and forwards to NIRMC.
9. NIRMC creates Instruction Memoranda and compiles the package for review by NCMS.
10. NCMS recommends approval, disapproval, additional investigation required to the project manager based on National Test Lab results.
11. If approval recommended investment is added or removed from the national baseline.
12. NCMS provides status to the project manager for implementation to the bureau and coordinates the release of the product.
13. NIRMC distributes the product to Bureau CM Specialists based on NCMS release authority.

## Overview of Software Configuration Management (SCM) And Hardware Configuration Management (HCM)

### Internal National Configuration Management Work Process

