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# **OAKS Configuration Management Plan**

**Prepared**

**for**

**The State of Ohio**

**OAKS Project**

**Prepared By**

**Accenture**

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## 1 Overview

The Configuration Management Plan establishes a sound Configuration Management approach that maintains the integrity of the Ohio Administrative Knowledge System (OAKS) project's systems and provides traceability for changes incorporated into the environment. The Configuration Management process integrates the technical and administrative actions of identifying the functional, performance and physical characteristics of a configuration item (CI) and controls the changes to those characteristics.

Configuration Management (CM) enables the controlled and repeatable management of information technology (IT) components as they evolve in all stages of development and maintenance. CM implements a process by which the project teams and stakeholders identify, communicate, implement, document and manage changes in the systems environment. When properly implemented, CM helps to maintain the integrity of the items that have been placed under its control.

This configuration management plan is authored to support the system integration phase of OAKS. This configuration management plan does not replace the original baselined configuration management plan, dated November 15, 2001 (in BI Designer at *OAKS\Cabinets\Project Management\Baselined OAKS Project Plan*). Instead it supplements that plan by adding information regarding the prime contractor's configuration practices, and incorporating the State's change control practices (see Section 9).

## 2 Roles and Responsibilities

The following section contains information on roles and responsibilities that are associated with implementing CM on the OAKS project. These descriptions are specific to CM and are in addition to the roles and responsibilities found in the Project Plan and the official Roles and Responsibilities documents for the project.

### 2.1 Project Managers – David White/John Hrusovsky

- Use CM Reports to gain visibility into project
- Resolve escalated CM issues and act on CM metrics, as appropriate
- Ensure team members are knowledgeable of CM concepts and techniques and that they are applied to project activities
- Prepare and conduct performance evaluations of OAKS project managers with respect to CM responsibilities

### 2.2 Deputy Project Managers – Brian Welch/Chris Mahne

- Review and approve the CM Plan
- Review all CM Reports
- Follow the CM processes and procedures outlined in the CM plan
- Establish the overall project schedule for CM activities with CM Manager
- Ensure team members are knowledgeable of CM concepts and techniques and that they are applied to project activities



- Prepare and conduct performance evaluations of OAKS project managers with respect to CM responsibilities
- Ensure the definition and maintenance of all development processes and standards, including CM
- Participate as a CM Deliverable Owner for the project as appropriate
- Participate as a CM-related PPQA (Process and Product Quality Assurance) Reviewer for other projects as appropriate
- Verify that all audits scheduled to be conducted as outlined in the CM plan are conducted

## 2.3 Quality Management Leads – Shirley Whaley/Andrew Gordon

The OAKS project's Quality Management Lead is responsible for reviewing the project's CM activities and work products and reporting the results using the Best Practices Review process as it is established, controlled, and implemented by the Quality and Process Improvement (QPI) Team. The Quality Management Lead may also conduct spot audits or assist with formal audits.

- Verify compliance with the CM standards and procedures set by the CM Manager, the CCB, the QPI Team, and any other affected groups;
- Review the CM Plan for adherence to standards;
- Verify the occurrence of periodic baseline audits;
- Verify occurrence of Functional and Physical Configuration Audits

## 2.4 Configuration Management Manager – John Houy/Lee Hoelscher

The project CM Manager will prepare the CM Plan with assistance from the Project Manager, the Project Manager Deputy, and the CM Coordinator.

The CM Manager has the following responsibilities:

- Identify configuration items (CIs) to be managed under Configuration Management processes
- Appoint members to the Change Control Board
- Create, manage, maintain, and communicate the CM Plan and any CM standards and procedures to all stakeholders
- Ensure that all project team members involved in CM receive training on their roles, how to perform their activities, and how to use CM tools.
- Form and manage a CM team (if necessary)
- Conduct performance review for members of the CM team (if necessary)

## 2.5 Configuration Management Specialist – TBD

The project CM specialist will provide input to the CM Plan with assistance from the CM Manager. The CM Manager is responsible for updating the CM plan when necessary and communicating those updates to the project team.

The CM Specialist has the following responsibilities:



## 1. Plan CM

- Assist CM Manager in identifying configuration items (CIs) to be managed under Configuration Management processes
- Create, manage, maintain, and communicate the CM Plan and any CM standards and procedures to OAKS project team members
- Make updates to the CM Plan, as appropriate, and only after approval by the Change Control Board
- Ensure that any updates to the CM Plan are communicated to appropriate project team members
- Establish project schedule for CM activities with Project Manager
- Conduct performance review for members of the CM team (if necessary)

## 2. Implement Changes

- Create products from the configuration management library as authorized by the Change Control Board
- Process and track change requests, and subsequent updates to the configuration management library
- Coordinate reviews of configuration item change requests (SIRs and CRs) with the Change Control Board

## 3. Track and Report on CM Status/Audits

- Ensure that the integrity of all items under its control are maintained by monitoring the status of all controlled items and tracking problem reports associated with them
- Conduct audits of CM activities as planned, including performing a baseline audit prior to closing baselines
- Track, report, and communicate CM status and audit reports to the Project Manager and Deputy Project Manager
- Ensure that configuration item change requests and problem reports for all configuration items are initiated, recorded, reviewed, approved, and tracked according to the procedure documented in the CM plan

## 4. Maintain Library

- Create and manage the configuration management library tool(s)
- Ensure that project team members have the appropriate access to the configuration management library

## 2.6 Change Control Board (CCB)

Although the CM Manager has overall responsibility for CM on the OAKS project, a Change Control Board (CCB) will be established to evaluate and authorize the changes to the system components that have been identified as configuration items. The CCB consists of members that represent each discipline and groups that are affected by changes to the configuration items.



The primary focus of the CCB is reviewing and determining the disposition of all requests to change the items that are under its control (code, documentation, data, etc). These requests can come in two forms; Change Requests (CRs) and System Investigation Requests (SIRs). SIRs and CRs are the only mechanism for authorizing changes to items under CM.

## 2.6.1 Change Control Board Members

There are essentially two tiers of CCB, the regular Project Management group and the Management Committee. The Project Management group meets regularly and will determine the disposition of most of the SIRs and CRs that are presented. However, there may be occasions where the Project Management group cannot make a decision without the input of the business sponsors, and at that point the SIR or CR will be escalated to the 2<sup>nd</sup> tier CCB, which is the Management Committee.

The Project Management Group consists of:

- David White – State of Ohio Project Manager
- John Hrusovsky – Team Accenture Project Manager
- Brian Welch – State of Ohio Deputy Project Manager and Technical Integration Manager
- Chris Mahne – Team Accenture Deputy Project Manager
- Lee Hoelscher – Team Accenture Technical Integration Manager
- Stephen Lampe – State of Ohio Change Management Lead
- Brenda Sprite – Team Accenture Change Management Lead
- Kevin Milstead - State of Ohio Finance Integration Manager
- Rod Barnaby – State of Ohio Finance Integration Manager
- Susan Tangren – Team Accenture Finance Integration Manager
- Paul Lavery – Team Accenture e-Procurement Manager
- Carolyn Nellon – State of Ohio HR and Payroll Integration Manager
- Chuck Burkhart – State of Ohio HR and Payroll Integration Manager
- Rajeev Sharma – Team Accenture HR and Payroll Integration Manager
- Avadhut Kulkarni – Sate of Ohio Technical Infrastructure Lead
- Phil Rowe – State of Ohio Data Solutions Lead
- Jerry Miller – State of Ohio Application Code Development Lead
- John Houy – State of Ohio Interface Lead
- Module Leads and other Team Leads as applicable

The Management Committee is defined in the Team Organization Chart, and represents OAKS sponsors and advisors.

## 2.6.2 Change Control Board Responsibilities

The CCB has the following responsibilities:

- Authorize the establishment of baselines and the identification of configuration items
- Monitor changes and updates to project requirements as part of CM



- Represent the interests of the project manager and any groups who are affected by changes to the baselines. Examples of affected groups include: user community, business sponsors, functional team, conversion team, technical team, change team
- Review and authorize requests for changes to the baselines (i.e. review SIRs and CRs)
- Authorize the creation of products from the configuration management library (i.e. authorize releases)
- Establish, document, and communicate criteria by which SIRs and CRs will be evaluated
- Review the CM plan
- Review and approve all new baselines
- Create and communicate CCB meeting minutes to affected groups

### 2.6.3 Change Control Board Schedule

The project level CCB currently meets on each Monday at 3:00pm in a designated area within the project site (actual location may change from week to week). The Management Committee meets approximately once per month, but can be convened as needed.

## 3 Plan Stakeholders

The stakeholders for the CM plan include all the members of the CCB listed above, and affected Team Members. As changes to this plan occur, the CCB will notify affected team members. Refer to the Communication Plan for more information about these stakeholders.

## 4 Plan and/or Process Dependencies

The following plans are closely linked to the CM Plan and may need to be updated if and when the CM Plan changes.

- Work Plan
- Change Request Process
- Issues Management Process
- SIR Process
- Performance Reporting Plan

## 5 Configuration Management Tool

Currently, there are two configuration management tools used on OAKS. Microsoft Visual Source Safe (VSS) and Business Integration Designer (BID). During the planning and analysis phases, VSS was the official records management tool for OAKS. Within this context VSS, was used for configuration management of document and records, and not software modules or components.

As of the systems integration phase of OAKS, BID is the official records management and configuration control tool for OAKS. However, recent requirements analysis activities have indicated a greater probability of customization of the PeopleSoft COTS product, which will require a more robust software configuration management tool. The technical team is in the process of researching and identifying a software configuration management tool for OAKS.



## 6 Configuration Management Items (CI)

A Configuration Item (CI) is defined as a work product that will require configuration control. A CI may be a single piece of work or a group of files that together form the basis for a single program or document. As the OAKS project progresses, more and more work products will be created and placed under configuration control. Items that are called out as CIs are those items that are placed in the various baselines throughout the project. CIs may also be defined at different levels as the project progresses. For example, during the Business Process Definition Stage, each individual business process flow may be called out as a specific and distinct CI, but once that stage is complete and the business process flows have been compiled into a larger deliverable, that larger deliverable becomes the CI that is comprised of all the process flows that were developed in the previous phase.

CIs are grouped into categories and are named according to a naming convention specific to that category. Each category may have different levels of control and use different tools to provide that control. The following sections describe the categories, levels of control, and naming conventions. The following table outlines the configuration items for the OAKS project. The following sections of the CM Plan define the categories, naming conventions, etc.

CI Category	Baseline Name*	Date or Stage CI Placed under CM	Owner	Repository / Path (Location of CI)	Level of CM Control	CI Name/ Reference Document**
Documentation	None	As needed	Team Leads	BI Designer	LAN with change history log in work product	Various
Initial Requirements	Preliminary Functional Baseline	Pre-contract	Project Manager	BI Designer	Fixed as stated in contract	Contract Exhibit B
Requirements	Requirements Baseline	At completion of Business Process Def Stage	Functional Lead	BI Designer	CCB Approval	Requirements Specification Document
Design	Design Baseline	At completion of Business Design Stage	Functional Lead	BI Designer	LAN with change history log in design	Design Specification Document
PeopleCode	Product Testing Baseline	At completion of Build/Unit test Stage	Development Leads	Development Database	Development Lead Approval	Development Specification Document
Source Code	Product Testing Baseline	At completion of Build/Unit test Stage	Development Leads	Development Environment (UNIX file system)	Development Lead Approval	Development Specification Document
Configuration Data	Product Testing Baseline	At completion of Build/Unit test Stage	Functional Lead	Configuration Database	Module Owner Approval	Configuration Design Document
Test Data	Product Testing Baseline	At completion of Build/Unit	Functional Lead	Quality Assurance Database	Module Owner Approval	Testing Specification Document



CI Category	Baseline Name*	Date or Stage CI Placed under CM	Owner	Repository / Path (Location of CI)	Level of CM Control	CI Name/ Reference Document**
		test Stage				
Test Conditions and Scripts	Product Testing Baseline	At completion of Build/Unit test Stage	Functional Lead	BI Designer	Functional Lead Approval	Testing Specification Document
Training Materials	Product Testing Baseline	At completion of Build/Unit test Stage	Training Lead	BI Designer	Training Lead Approval	Training Specification Document

**Table 1 - OAKS Configuration Items**

\*A baseline is a set of configuration items that has been formally reviewed and agreed upon, which then serves as the basis for further development, and can be changed only through the formal change control process. Usually similar configuration items are grouped in the same baseline, such as all of the completed requirements being a part of a requirements baseline. Baselines for the OAKS project are defined later in this document.

\*\* Individual configuration items can be listed separately in the table above, or a reference to a file name with all the CIs listed in that category can be noted instead. In addition, the location of this file or the individual CIs need to be documented under the location column.

## 6.1 Categories of Configuration Items

The OAKS project groups configuration items into categories in order to manage similar items in a similar fashion. The categories used on the OAKS project are:

- Documents:
  - Deliverables
  - Non-deliverables (Status Reports, and Meeting documentation)
- Requirements
- Design
- PeopleCode
- Configuration Data
- Test Data
- Test Conditions and Scripts
- Training Materials
- Development and Testing Environments

## 6.2 Levels of Configuration Management Control

The OAKS project has defined the levels of CM control that each CI Category will need. Fairly static CIs, such as, meeting minutes or status reports, are on the Local Area Network as read-only files and maintained by the individual leads. These CIs are maintained at the lowest level based on the project's CM Plan. However, the project includes all dynamic CIs, such as source code in the project's CM tool. Refer to the control column of the CI table above. For further details on levels of configuration control see Section 9.0.





Prior to this engagement, the State of Ohio created a set of functional and technical requirements to be used as the starting point for the OAKS project. This set of requirements was communicated as part of the formal contract between Accenture and the State of Ohio.

- Revised Requirements Baseline

The requirements baselines will be established after the acceptance or client approval of all requirements at the conclusion of the Conference Room Pilot stage. The final set of requirements will be tracked in the Requirements Traceability Matrix, and will be referenced in the Client Sign off.

- Design Baseline

The design baseline will be established after the client's approval of all associated design documentation at the conclusion of the Design Stage. The requirement(s) and associated design documentation define the allocated configuration items in the design baseline as they exist after all SIRs and CRs approved in Design have been implemented. The Design Baseline is comprised of the requirements as tracked by the RTM and the individual design documents as approved in the System/Sub-system Design.

- Product Testing Baseline

The Product Testing Baseline will be established after the completion of Unit Testing. This baseline is used as a stable platform on which to begin Product testing. This baseline includes the requirements, the design, and all code modules as they exist after all SIRs and CRs approved in Product Testing have been implemented.

- User Acceptance Testing Baseline

The User Acceptance Testing Baseline will be established after the completion of System Acceptance Testing. This baseline is used as a stable platform on which to begin User Acceptance testing. This baseline includes the requirements, the design, and all code modules as they exist after all SIRs and CRs approved in Product Testing have been implemented.

- Production Baseline

The Production Baseline will be established after the completion of User Acceptance Testing and represents the configuration of the final system as delivered into production. This baseline includes the requirements, the design, and all code modules as they exist after all SIRs and CRs approved in User Acceptance Testing have been implemented.

## 8 Requirements Management

### 8.1 Requirements Management Tool

There is not a dedicated requirements management tool for OAKS. Requirements are management in MS Excel spreadsheets, and are baselined in BI Designer. OAKS will cross-reference requirements with the appropriate design documents, test conditions and test scripts that are created as a result of the requirements. The cross-reference requirements demonstrate that all work products and plans are based on the requirements.

Further, OAKS will place requirements under the control of CM and keep track of requirements using the Requirements Traceability Matrix (RTM). The project will use the RTM to track requirements through all phases of the project. The RTM will demonstrate how the project's



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requirements have been implemented by referencing requirements to design documents, test conditions and test scripts that result from them. The project will control all updates to the requirements through a formalized change control process. This includes the completion of a change request for each update to requirements. The change request will be reviewed and approved before the requirement can be changed.

Prior to the incorporation of requirements into future deliverables, project management will review all requirements to make certain that:

- Incomplete or missing requirements are identified
- Requirements are feasible and appropriate to implement in the software, clearly and properly stated, consistent with other requirements, and testable
- Requirements that have been identified as having problems are reviewed and analyzed with the appropriate groups and necessary updates are made

Project management will verify that the project team understands how all requirements will be implemented and that the project team understands that it is responsible for incorporating the requirements into the appropriate deliverables. The project will use readiness checklists and entry/exit criteria upon exiting a stage to provide a checkpoint to verify that the RTM has been updated before proceeding to the next stage.

Changes to existing requirements are called Change Requests (CR), and are subject to the change process outlined in Section 9.5. New requirements (hence, increasing scope) are called Baseline Change Requests (BCRs) and are also subject to the change process outlined in Section 9.5



## 9 Change Control Process

This section of the configuration management plan incorporates the state's change control processes originally documented in change control procedures v.2 draft 062904.doc, (*in BID at OAKS\Cabinets\Project Management\Baselined OAKS Project Plans*), and Team Accenture's change implementation and SIR evaluation processes.

The project change control process is based on the configuration item category for which a change is requested. Five configuration item categories have been identified as follows:

- Administrative Items
- Project Documentation
- Communication Tools
- PMO Tools
- ERP Configuration Items

**Table 2 - Configuration Control Item Categories**

CI Category	Category Examples	Approval Channel	Version Control	Notification Channel
Administrative Items	<ul style="list-style-type: none"> <li>• Minutes</li> <li>• Agendas</li> </ul>	1) Originating IPT	No	Made available on Shared Drive
	<ul style="list-style-type: none"> <li>• LAN Directory-Other than Published Documents folder ***</li> </ul>	1) Technical Lead	No	Change Request-LAN (section 9.7)
	<ul style="list-style-type: none"> <li>• LAN Directory, Published Documents folder *</li> </ul>	1) Technical Lead 2) Configuration Management Team (including both OBM and DAS approval)	No	Change Request (Section 9.7)
Project Documentation	<ul style="list-style-type: none"> <li>• Project Plan and management plans</li> <li>• Project Charter</li> <li>• Business Continuity Plan</li> <li>• Contractor Deliverables</li> </ul>	1) Originating IPT 2) EPM	Yes	Change Request (Section 9.7)
Communication Tools	<ul style="list-style-type: none"> <li>• Intranet content</li> <li>• Internet content</li> <li>• Extranet content</li> <li>• Press releases</li> <li>• Newsletters</li> </ul>	1) Change Management IPT 2) EPM	No	BTA Update
PMO Tools	<ul style="list-style-type: none"> <li>• Web sites design</li> <li>• PC/LAN/Server hardware and software changes **</li> </ul>	1) Originating IPT 2) Configuration Management Team (including both OBM and DAS approval) 3) EPM	Yes	Change Request (Section 9.7)



	<ul style="list-style-type: none"> <li>PMO databases</li> </ul>	<ol style="list-style-type: none"> <li>1) Originating IPT</li> <li>2) Configuration Management Team (including both OBM and DAS approval)</li> <li>3) EPM</li> </ol>	No	Change Request (Section 9.7)
ERP Configuration Items	<ul style="list-style-type: none"> <li>Changes to existing requirements</li> <li>New Requirements</li> <li>System Requirements Specification</li> <li>System Design Document</li> <li>Test Plan</li> <li>User documentation</li> <li>Software</li> <li>Hardware</li> </ul>	<ol style="list-style-type: none"> <li>1) Financials or Human Resources PM</li> <li>2) Functional or Technical Team Lead</li> <li>3) Configuration Management Team (including both OBM and DAS approval)</li> <li>4) EPM</li> <li>5) BOA (cost, time, scope changes only)</li> </ol>	Yes	Change Request (Section 9.7)

Table 2 describes each of the five configuration item categories in terms of examples, approval channels, version control, and notification channel. A separate change process flow is depicted for each configuration item category.

## 9.1 Administrative Items

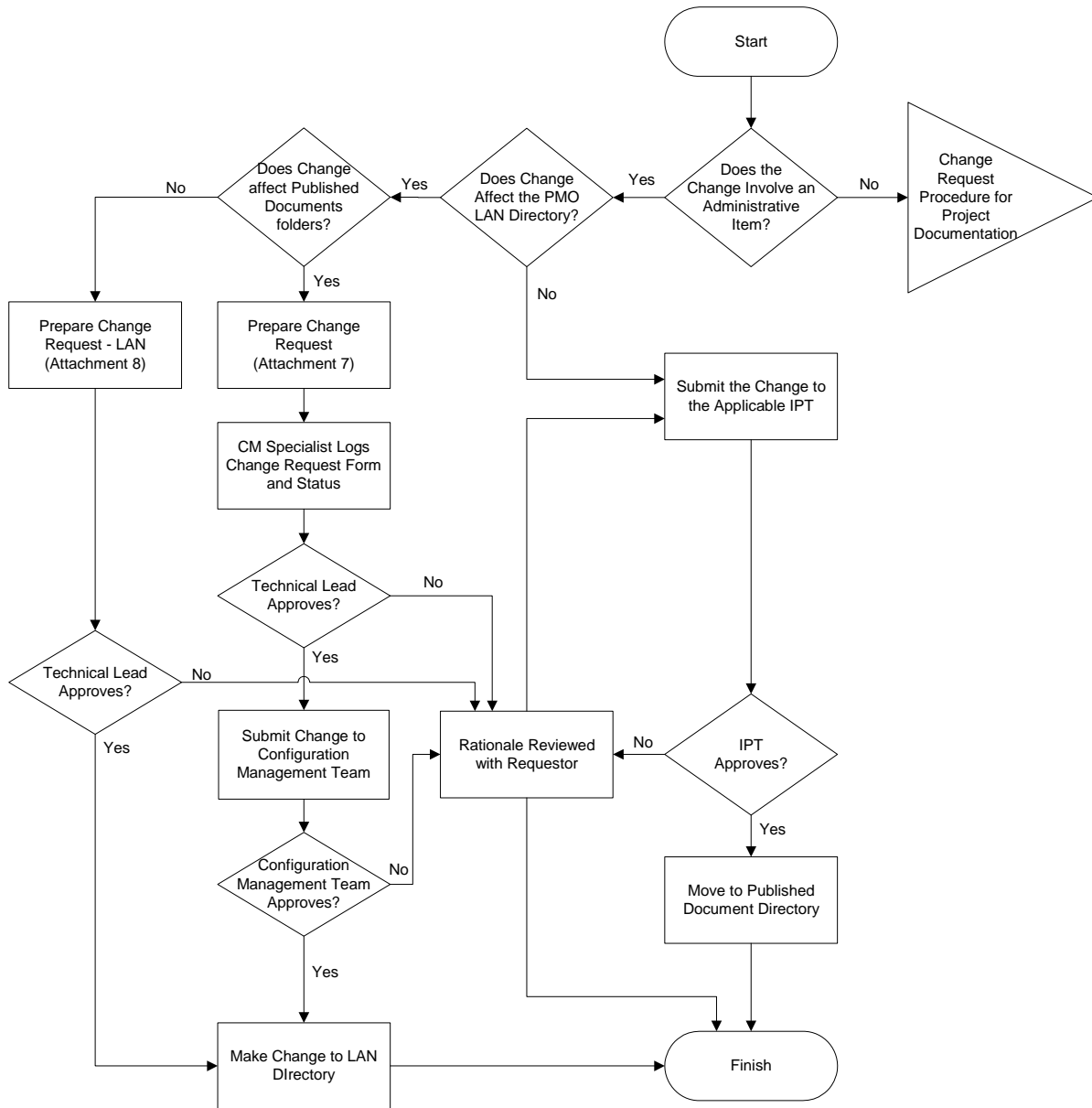
The first configuration item category involves administrative items. Administrative items are those documents and tools that are used for documenting the administrative aspects of the OAKS project. Examples include meeting minutes and agendas and the structure of the LAN directory.

Generally, administrative items are relatively static and not subject to a highly controlled review process. As depicted in Figure 2, once a change relating to an administrative item is identified, the change is first reviewed to determine if it is related to the PMO LAN directory. If the change request is related to the Published Documents directory on the PMO LAN, the change request is documented on a Change Request Form (Section 9.7), approved by the Technical Lead, then submitted to the Configuration Management team for approval. If it is related to a directory other than the Published Documents directory on the PMO LAN, the proposed change request is documented on a *Change Request Form– LAN Directory* (Section 9.7) and submitted to the Technical Lead for approval. If the Technical Lead accepts it, the approved change is made to the LAN directory. If Technical Lead does not approve the change, the rationale for the proposed change is reviewed with the requestor to determine why the change is appropriate or not appropriate.

Proposed changes that are *not* related to the LAN directory are submitted to the applicable integrated project team that is assigned responsibility for the particular administrative item being changed (e.g., the procurement team is responsible for the ownership of all procurement related meeting minutes). The responsible integrated project team (IPT) reviews the changes and, if accepted, the change is moved by the Technical Documentation Specialist for posting to the



shared drive. If the applicable integrated project team does not approve the proposed change, the rationale for the proposed change is reviewed with the requestor to explain why the change is not appropriate.



**Figure 2 - Change Procedure for Administrative Items**

## 9.2 Project Documentation

### 9.2.1 State Maintained Project Documentation



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The second configuration item category involves project documentation items. Project documentation items are those documents and tools that are used for documenting various management and lifecycle phases of the OAKS project. Included are all softcopy and hardcopy documents and files distributed to team members, committee members, state employees, or the general public. Examples of project documentation items are the Project Plan, Configuration Management Plan, Project Charter, and Business Continuity Plan.

Project documentation items are evolving documents that are subject to update as the project progresses from the planning phase through analysis and design to implementation. All project documentation items are subject to version control. As depicted in Figure 3, once a change relating to a project documentation item is identified, the change is first submitted and reviewed with the applicable IPT that is assigned responsibility for the particular project documentation item being changed (e.g., the risk management team is responsible for the ownership of the Risk Management Plan). The responsible IPT reviews the change and, if accepted, the change is elevated for review by the Executive Program Manager (EPM).

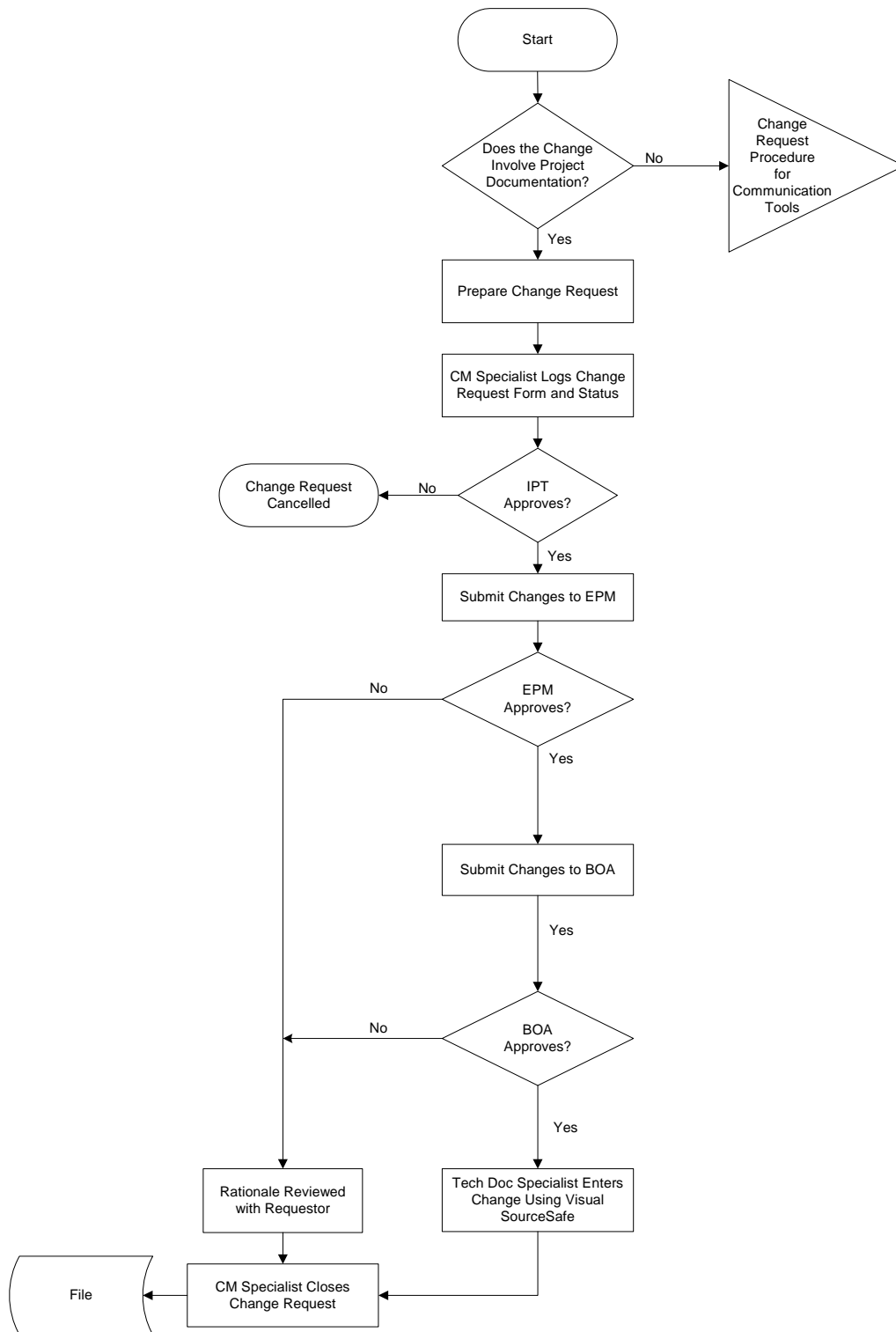
Upon approval by the EPM, the proposed change is successively elevated for approval by the Business and Technical Advisory Group (BTA) followed by the Business Owners Advisory Group (BOA). If the submitted change is rejected at any point in the approval hierarchy, the rationale for the change is reviewed with the requestor, and if appropriate, resubmitted through the approval chain.

Once a submitted change has been approved by the IPT, EPM, BTA, and BOA, the Technical Documentation Specialist enters the change for the project documentation item.

The draft of configuration items begins with a version number of 00. The initial baselined version is numbered 01 with each subsequent baselined version incremented by one. Many approved changes may be made to a document until the next baselined version at the end of the next project phase. The changes during the project phase will be tracked via the change request forms and via VSS. The baselined versions and the most recent copy of the current version will be available on the project's shared drive.

Not all documentation items are subject to version control. Point-in-time documentation (e.g., minutes, agendas, etc.) and limited use documents (e.g., RFPs, fact sheets, etc.) will be maintained on the shared drive for purposes of maintaining an "official" or latest version of this information. However, these items are not configuration items subject to the formal configuration management practices (e.g., version control) described in this plan.

Refer to the OAKS Project Records Management plan for further details on how project documentation is maintained (in BI Designer at *OAKS\Cabinets\Project Management\Working Deliverables\Deliverable 9*).



**Figure 3 - Change Procedure for State Project Documentation**

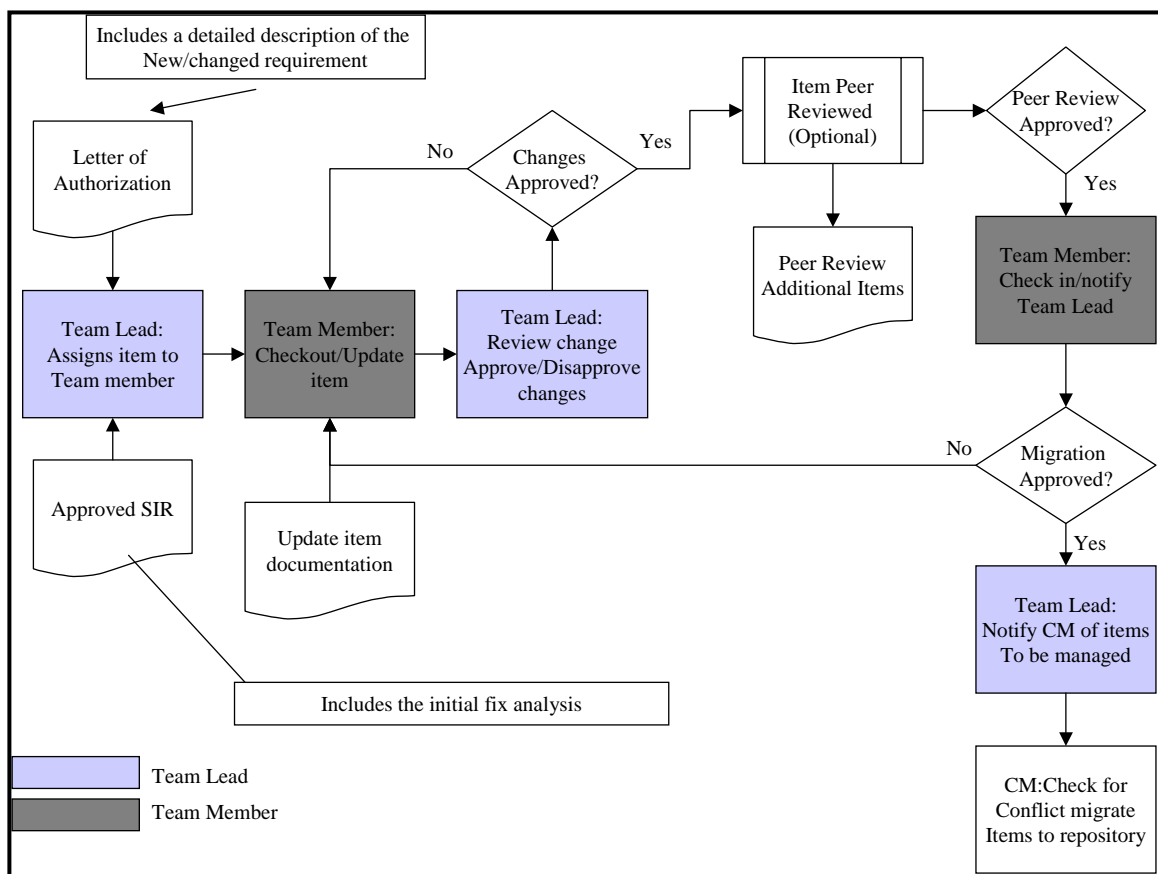
The change requests will be logged to maintain a history. Activity will be reviewed in configuration management team meetings and documented in the meeting minutes.



## 9.2.2 Contractor Maintained Configuration Items

Team Accenture generates and maintains configuration items in order to meet OAKS contractual deliverable obligations. All in-process and final deliverables (documentation) will be stored in the records configuration control tool BID.

Like the State's administrative change control process, most items in BID are not subject to a tight change control process. The only exceptions to this rule are changes to final deliverables, and baselined artifacts. After a deliverable has been formally accepted by the State, all changes must follow the official change implementation process (see Figure 4).



**Figure 4 - Change Implementation Process**

This includes changes to the following Configuration Items:

- Baselined project requirements
- Software configuration items (source code, report templates, configuration files, etc.)
- Baselined design artifacts (interface mapping spreadsheets, data models, etc.)



- Formally accepted project deliverables

Refer to the OAKS Project Records Management plan for further details on how project documentation is maintained (in BI Designer at *OAKS\Cabinets\Project Management\Working Deliverables\Deliverable 9*).

### 9.3 Communication Tools

The third configuration item category involves communication tools. Communication tools are those items that are used for the internal and external reporting of OAKS events and progress. Examples include Internet content, intranet content, extranet content, press releases and newsletters.

Communication tools are generally subject to update and review prior to their official issuance. Communication tool items are not subject to version control. As depicted in Figure 5, once a change relating to a communication tool item is identified, the change is first submitted and reviewed with the Change Management IPT.

The Change Management IPT reviews the communication tool item and, if it is approved, the item is elevated for review by the EPM. Upon approval by the EPM, the BTA is notified of the communication tool item and the item is authorized for release.

If the communication tool item is not approved by either the Change Management IPT or the EPM, the item is reviewed with the requestor and if appropriate, resubmitted through the approval chain. All communication tool items and changes are maintained by the Technical Documentation Specialist using Visual SourceSafe.

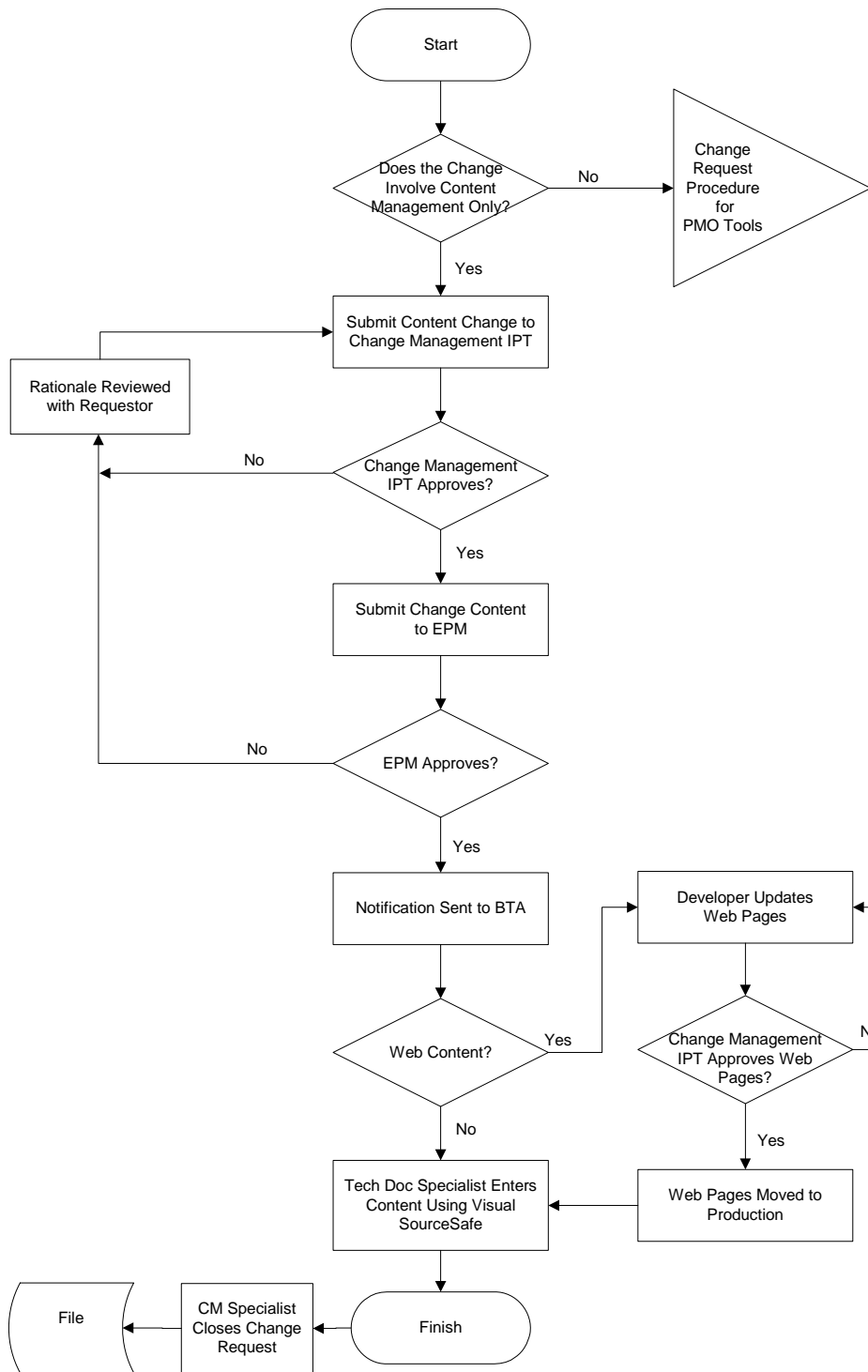


Figure 5 - Change Procedure for Communication Tools

## 9.4 PMO Tools



## Ohio Administrative Knowledge System

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The fourth configuration item category involves PMO tools. PMO tools involve databases, software items, and other hardware/software systems that are used by the PMO to conduct project processes. The web sites design and PC/LAN/Server hardware and software are subject to version control. Databases are not subject to version control.

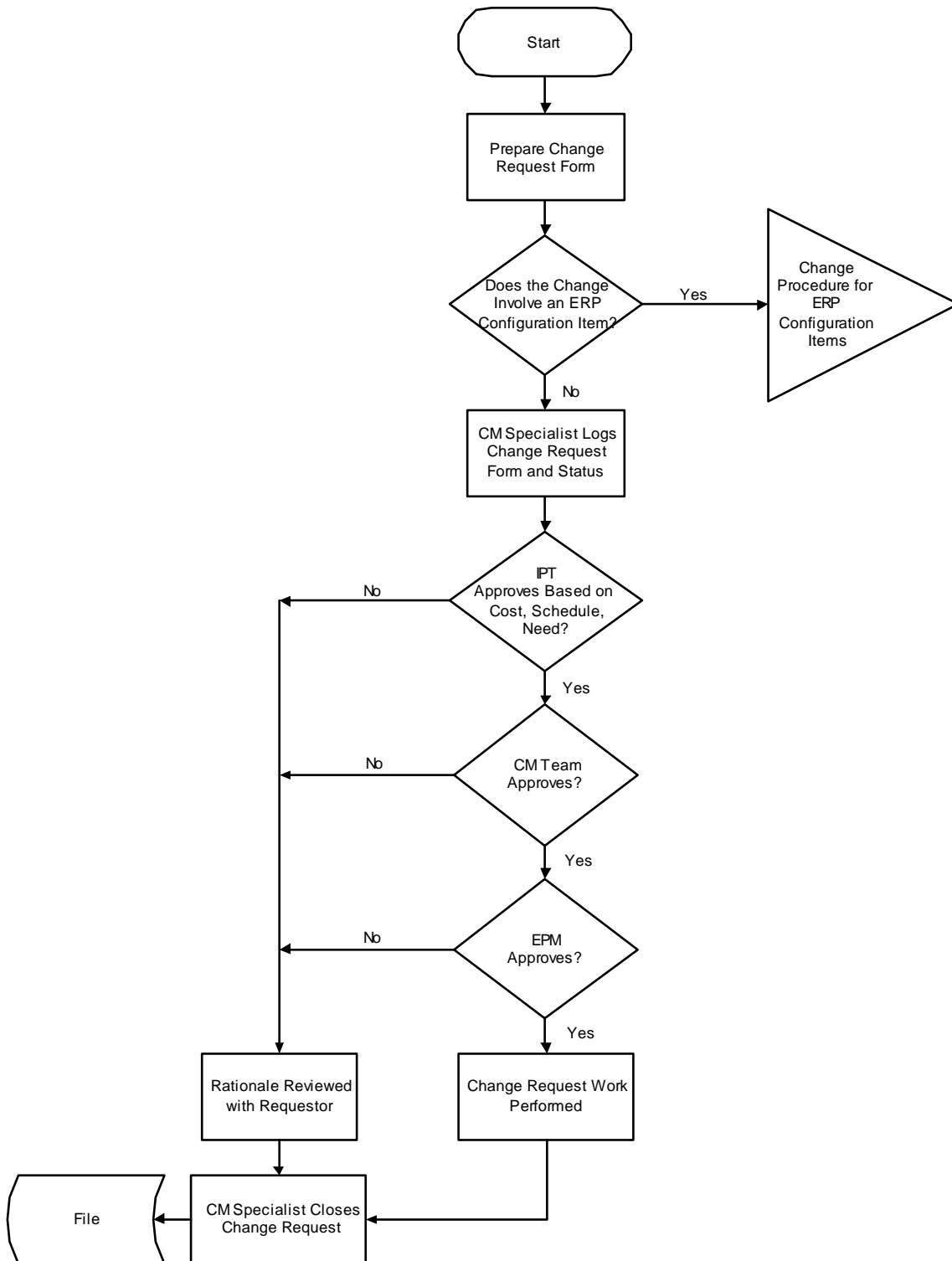
As depicted in Figure 6, proposed changes to PMO tools are documented on a Change Request Form and logged by a Configuration Management Specialist. These changes are first submitted and reviewed with the applicable integrated project team that is assigned responsibility for the particular PMO tool being changed (e.g., the Change Management team is responsible for the ownership of the web sites). The responsible IPT reviews the change and, if accepted, the change is elevated for review by the Configuration Management team followed by the EPM.

Upon approval by the EPM, work to implement the PMO tool change is assigned. Automatic updates for virus/spam software are excluded from this process due to their timely nature.



# Ohio Administrative Knowledge System

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**Figure 6 - Change Procedure for PMO Tools**



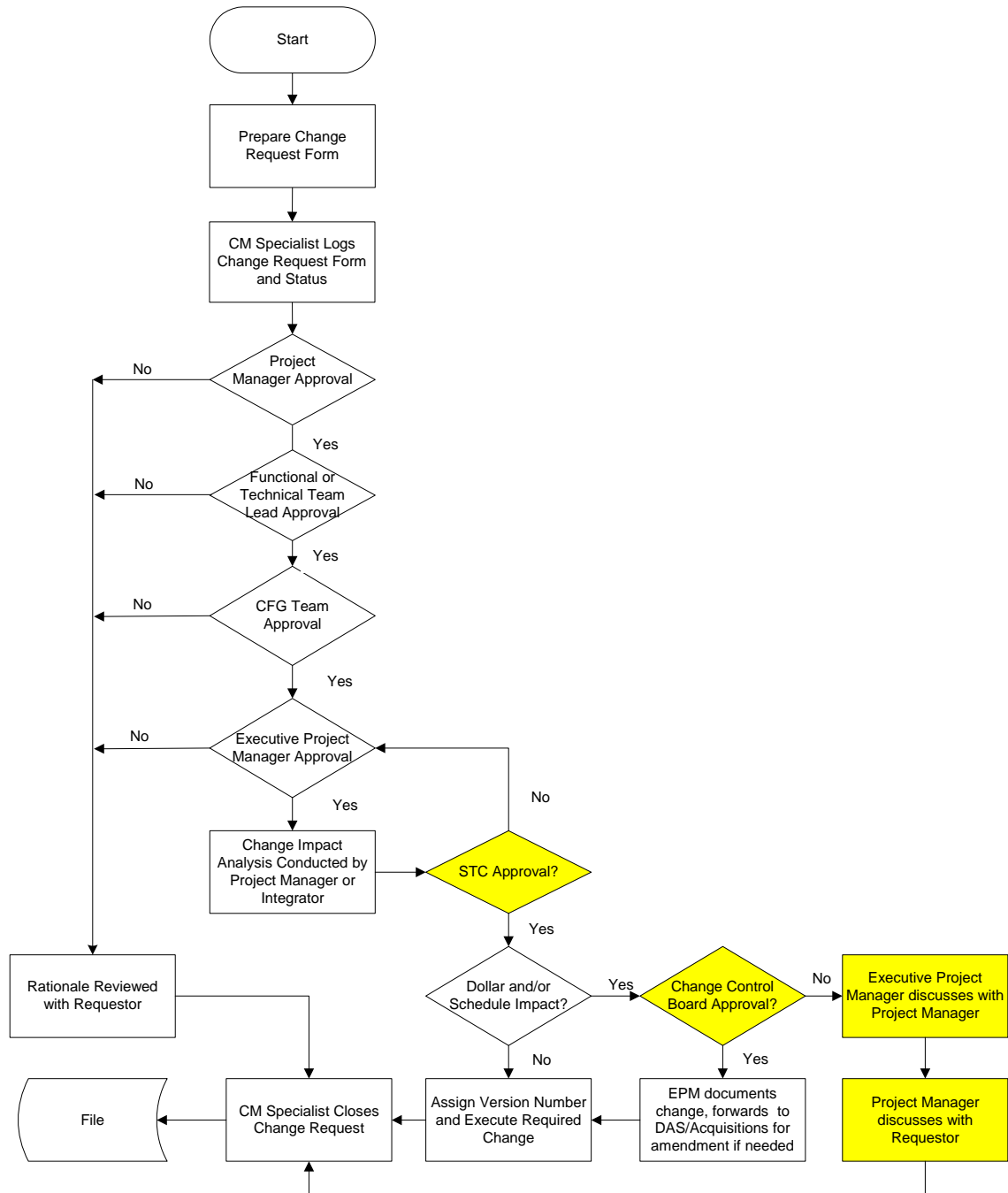
## 9.5 ERP Configuration Items

The fifth configuration item category involves ERP configuration items. ERP configuration items involve documentation, software, and hardware related to OAKS. Examples of ERP configuration items include the requirements and design documents, the ERP software and the hosted platform. All ERP configuration items are subject to version control.

As depicted in Figure 7, proposed changes to ERP configuration items are documented on a Change Request Form and logged by a Configuration Management Specialist. These changes are first submitted and reviewed with the applicable integrated project team that is assigned responsibility for the particular ERP configuration item being changed (e.g., the human resources team is responsible for the ownership of all human resources related changes). The responsible IPT reviews the change and, if accepted and applicable, the responsible IPT coordinates, documents, and analyzes all impact analyses. Once completed, the change is elevated for review by the Configuration Management (CM) team followed by the EPM.

Upon approval by the EPM, the BTA reviews and approves all baseline changes. Once approved by the BTA, changes identified to potentially have cost/schedule impacts are escalated to the BOA. The BOA is responsible for approving, disapproving, or tabling all requests for changes to the formal baselines where there is an impact to the cost and/or schedule.

Upon approval, an assigned version number for the configuration item is assigned and the change is executed. If the ERP configuration item is not approved at any point in the approval chain, the item is reviewed with the requestor and, if appropriate, resubmitted for approval. All items are maintained by the Technical Documentation Specialist using VSS.



**Figure 7 - Change Procedure for EPR Configuration Items**

\* The CM Team approves major directory changes; Technical Lead approves subfolder changes

\*\* Subject to cost (see table 1 below), virus/spam software automatic updates excluded



\*\*\* No approval is required for subfolder changes.

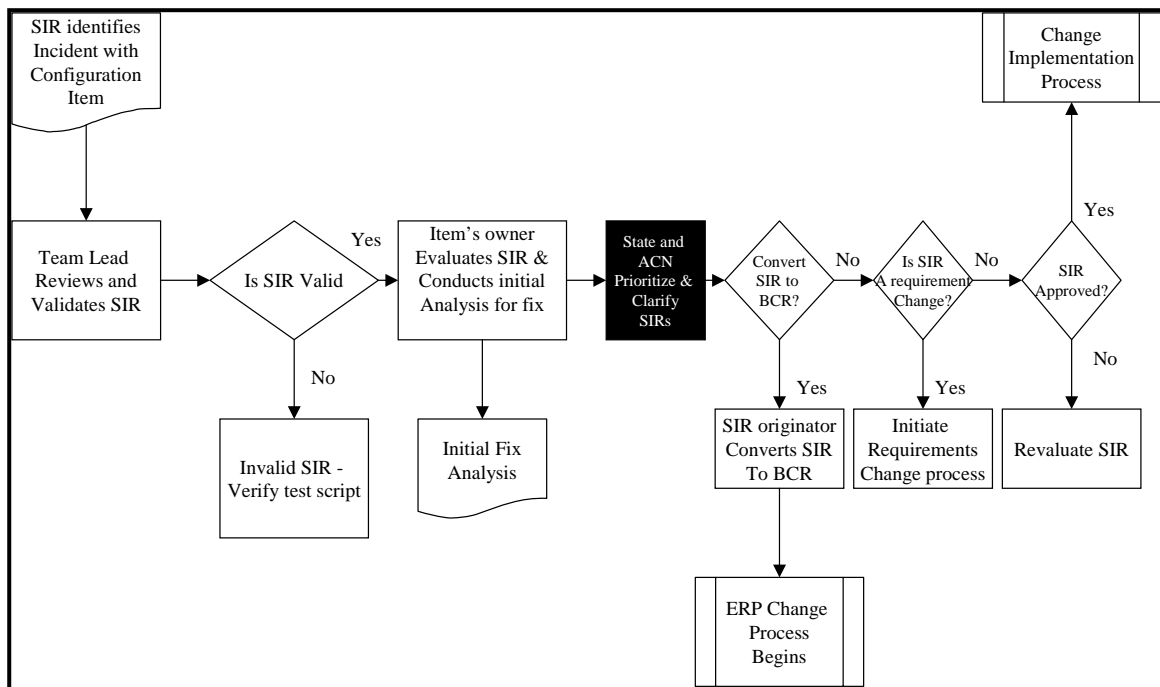
**Table 3 - Purchase Approval Matrix**

Item	Requestor	Approval 1	Approval 2	Approval 3
Purchase < \$1,000.00	BTA	Technical Lead *		
Purchase > \$1,000.00 but less than \$10,000.00	BTA	Technical Lead	EPM*	
Purchase > \$10,000.00.	BTA	Technical Lead	EPM	BOA *

\* - final approval

## 9.6 Software Incident Reports (SIR) Evaluation Process

SIRs are bug reports completed during the testing and deployment phases of OAKS. SIRs are submitted whenever it appears the OAKS application does not completely satisfy a requirement. Typically, SIRs are used to document problems or defects in the software, however in some



**Figure 8 - SIR Evaluation Process**



instances, a SIR may be converted into a CR or a BCR based on a detailed analysis of the SIR and associated requirement. The process flow in Figure 8 illustrates the SIR evaluation process. Routine SIRs will result in changes (bug fixes) to the application. Such changes require updates to software modules under configuration control (see Figure 7) and once the



change has been approved, the updates to the configuration items are implemented (see Figure 4).

## 9.7 Change Control Forms

The following embedded forms should be used whenever requesting a change to configuration item as described in Table 2.

Change Control Form	Form Template
Project Change Request Form	 "Project Change Control Form.doc"
Change Request Form – LAN Directory	 "Change Request Form - LAN Directory"

## 10 Audits

The OAKS project conducts Configuration Management Audits periodically to verify consistency between the system and associated documentation. Configuration audits are also used to verify that the required product attributes (performance requirements and functional constraints) have been achieved and the design has been accurately documented.

The Configuration Manager is responsible for see that all scheduled audits are conducted, reported, and that all discrepancies are resolved. The CM Manager may conduct the audits are delegate the task to an appropriate team member. For example, the Functional Team Lead may be responsible for conducting audits relating to the inclusion of all the approved requirements. The PI Liaison may also assist in conducting audits and will conduct spot check audits periodically.

### 10.1 Audit Types

The Configuration Management Manager (team) will co-chair, with the State of Ohio representative, the formal CM audits: the Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA).

#### 10.1.1 Functional Configuration Audit (FCA)

A FCA is used to verify that the actual performance of the CI(s) meets the requirements stated in its performance specification and to certify that the CI(s) has met those requirements. This is a formal audit and it is required at the end of all testing just before deployment into a production environment. Test results may qualify as evidence in a FCA. In a FCA, the Configuration



Manager needs to the following activities were properly completed just before the product is released into production and/or to the client:

- All deliverable code has been validated against the approved Requirements Traceability Matrix.
- All deliverable code has been validated against the approved Design Documents, and Test plans.
- Any deliverable or non-deliverable documents placed under CM control have been updated properly.

## 10.1.2 Physical Configuration Audit (PCA)

A PCA, another formal audit which is required, is used to examine the actual configuration of the CI that is representative of the product configuration verifying the related design documentation matches the design of the deliverable CI. The PCA may also be used to establish the Production Baseline. In a PCA, the Configuration Manager needs to the following activities were properly completed:

- All CIs were physically identified.
- All Change Requests (CRs) or System Investigation Requests (SIRs) open against any CI were reviewed and are in an appropriate status (e.g., closed, deferred, rejected).
- Make sure all CIs physically followed the standards specified in the CM plan.
- A Status Report was created to track any open issues/violations of PCA criteria or the CM plan.

## 10.2 Report Audits

Audit results are reported to the Management Team and communicated to appropriate team members as needed. Audited items that are not in compliance with the configuration management standards within the CM Plan are tracked until they are resolved.

Baseline audits and Spot Check audits will be reported on the status report of the individual conducting the audit. In instances where an external party is conducting the audit (e.g. the PI Liaison), the audit will be reported on the individual status report of the team member facilitating the audit.

The Functional Configuration Audit and the Physical Configuration Audit will both be reported on the CM Managers status report or the Tech Team Status Report.

Any discrepancies noted in any audit will be logged into the Issues Log and will be managed to closure through the standard Issue Management process.

## 10.3 Close Audit

Once all discrepancies have been resolved, the audit will be closed. Closure of audits will be reported in the same format as the outlined in the section above. If no discrepancies are noted, the audit can be reported on and closed in a single status report. When discrepancies were noted, the reporting of the closure will include reference to the relevant closed Issues.



## 11 Configuration Status Accounting

Configuration Status Accounting (CSA) is the process of recording, monitoring, and reporting of all changes to established CIs. It is performed to verify that project team members and other stakeholders are made aware of changes to these established CIs. Specifically, CSA profiles the following information for each change made to a CI:

- Description of the change/problem.
- Impact analysis of the change/problem.
- Status of the CR/SIR.
- Name of implementer of the change/fix.

CSA plays a key role in the success of medium to large development/maintenance programs. CSA provides the necessary coordination to each program team is aware of changes/fixes being made by other program teams. The inter-team coordination helps the full impact of a proposed change/fix is investigated and communicated to all affected program teams prior to being approved for implementation.

CSA also refers to the record keeping function of CM. CSA exists to provide all the technical information about the project system's configuration (hardware, software, and documentation), as well as the change history of the project's system. The CM group (CM Manager and CM Team) should be responsible for the following CSA activities:

- Provide CI status reports to the Project Manger.
- Provide CM measures reports to the Project Manager.
- Provide listing of all CIs contained in a baseline, release, and CM controlled repository.
- Provide change history documentation for CIs as needed.

## 12 Migration

See the project's Migration Procedures document.