STANFORD

INFORMATION TECHNOLOGY SERVICES

Change Management Process Document

Draft

August 16, 2009

Version 4.0 (use of CMDB)

Important:

1. This is a living document.

2. There will be a review of this document, with potential updates, three to six months following the approval and implementation of the newest version.

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1.0   Document Information and Revision History

1.1   File Information

File Name/Path:	Process_050811.doc
Original Author(s):	Nan McKenna, Aamir Chaudry, Bill Heiser, Chris Lundin, Sean Matheis, Jon Pilat
Current Revision Author(s):	Bruce Campbell

Table 1 Document File Information

1.2   Document Revisions

Version	Date	Author(s)	Revision Notes
1.1 to 1.9			Miscellaneous revisions
2.0	9/7/05	Bruce Campbell	Reformatted document
2.1	9/12/05	Bruce Campbell	Incorporated changes from BH, BB, DA
2.2	9/14/05	Bruce Campbell	Added row to table14, updated version # and date
2.3	9/15/05	Bruce Campbell	Updated Table 14, incremented version # updated TOC, LOT, TOF
2.4	10/03/05	Bruce Campbell	Modified and replaced figs 1, 3, 4, 5, 6, 7, 8, 9, and 10. Modified footnote 1 p6 to read "260," and replaced "submitters" with "initiators." Applied updates to Sign Off doc, replaced "tweaks" with "revisions." Corrected minor issues in table 14, Load Balancing and Shared Apps Support Config Changes. From fig 1, copied text inserted w/ fig 10. Appendix C, #4, corrected to "changes."
2.5	10/26/05	Bruce Campbell	Small change to figs 1 and 10
2.6	10/28/05	Bruce Campbell	Modified figure 1, p 7; added numbering for section headings' removed numbering from Appendix A, Category column, Tree Diagram, replaced with headings only, placed Document Signoff at end of doc. Added cross-ref note to appendix A and B, added text boxes to Tree diagram, begin table 14 on previous page,
	10/31/05		Deleted previous revision history info
2.7	11/1/05	Bruce Campbell	Reduced horizontal spacing in section 7 tables, revised headings in section 7.0.deleted Key Performance Indicators-Appendix C, added Appendix A, CM Policies, deleted glossary table, added verbiage and modified symbols in fig 9, modified verbiage Appendix C.
2.8	12/09/05	Bill Heiser	Page 14, item 1.3, page 18, items 3.2 and 3.7, Page 21 items 3.7 and 3.9, page 24 item 3.14. Updated footers, Toc.
3.0	3/16/06	Bruce Campbell	Incremented to v3.0. Deleted Key Change Management Terms and Definitions table, Priorities table, Lead-Times table, Appendix B Change Management Process tree diagram, Configuration Covered table, Appendix C Detailed cross-reference table for tree diagram, inserted 5.1, updated TOC, Table of Figs, List of Tables, header/footer
4.0	8/16	Vacilis Kollias	1. Added CI Viewer Process step (1.1.1) in Figure 3 2. Added section 7.8 "CI Information – CI Viewer Process"

Table 2 Revision History

1.3   *Document Ownership and Distribution*

The maintenance owner of this document is the Process Owner. The primary audience for this document is the management and staff of ITSS.

2.0   Introduction

This document describes the process for Change Management in ITSS at Stanford University.

The goal of Change Management is to ensure that standardized methods and techniques are used for efficient and prompt handling of IT changes to minimize the likelihood of disruption, unauthorized alterations, and errors.

The Change Management process redesign is a deliverable of the Operational Excellence Program's Change Management initiative.

3.0   Assumptions and Caveats

The process described in this document (hereafter called the Change Management (CM) Process) focuses narrowly on a single step of a larger Change Management process that includes governance and approval, resource management, impact analysis, testing, and so on.

Specifically, this Process document focuses narrowly on entering previously approved Change Requests[1] into a system, obtaining authorization, scheduling, implementing, notifying key groups/staff/clients, and reviewing changes. It assumes that several events have occurred prior to the first step in this process. Specifically, it assumes that:

- The strategic and business/service owner(s) have approved the proposed change and have allocated resources to develop and test it

- Clients have been consulted about the change

- The change has been built and tested

- Impact analysis (of services, downstream applications, additional resources, and so on.) has been performed and ideally documented in some form

This narrow focus may have inadvertently caused new efficiencies to be missed and/or cause new inefficiencies in the future. To mitigate this risk, it is recommended that the larger Change Management process (i.e., all the steps preceding change notification, authorization, scheduling, and implementation), which includes governance and approval, resource management, and testing processes (among others), be reviewed as soon as possible.

As the Change Management process interfaces with Release Management, Incident Management, and Configuration Management, it is also recommended that ITSS review these processes.

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[1]Currently, there are approximately 260 Change Management System (CMS) users, including initiators and approvers. Initially, it is anticipated that there will be 50-60 Change Requests per day.

4.0   Process Overview

4.1   Process Objective

The objective of the Change Management process is to ensure that standardized methods and techniques are used for efficient and prompt handling of IT changes in order to prevent change-related incidents. The objective is to make changes in such a way as to minimize negative impact on the delivery of services to users and clients.

4.2   Process Scope: Systems and Services Covered

All production services, as well as all services with agreements that specifically state service levels and environment up-time, are subject to the Change Management process and policies. See Appendix A for a full list of Systems and Services covered.

4.3   Process Scope: Types of Changes Covered

All changes to services depicted in the following high level diagram are subject to the Change Management process and policies. Note: This diagram is also referred to as the "Tree Diagram."

See Appendix A for a full list of the types of changes covered (expanded version of figure 1).

See Appendix B for a detailed explanation of the Figure 1.
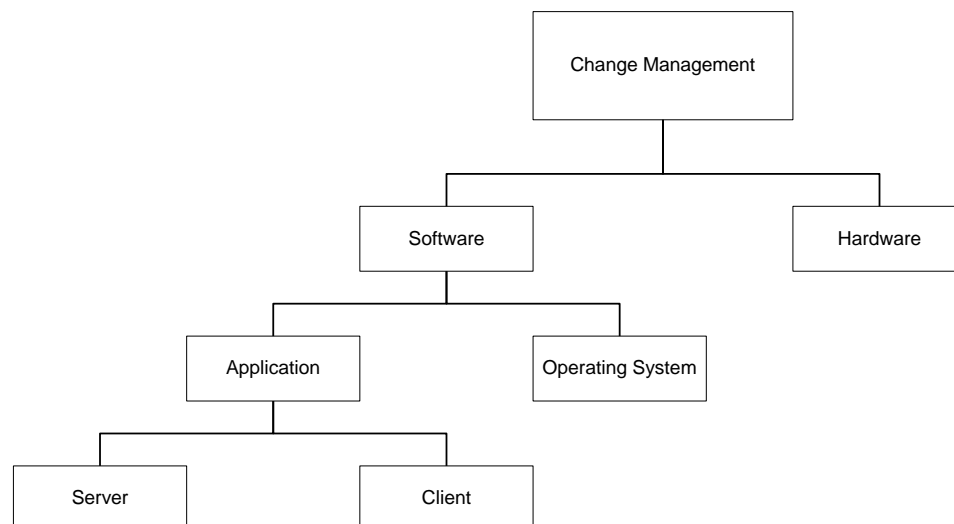
Figure 1 Types of Changes – High Level

5.0   Key Change Management Terms and Definitions

5.1   See Change Management Policy document.

6.0   Process Flow and Activities

6.1   High-Level Flow

The following flowchart depicts the high level activities of the Change Management process. Each activity may or may not have sub-activities that further clarify the actions that are undertaken throughout the process.

It is assumed that Change Requests have been approved by Line Managers, Governance Groups, and Service/Business Owners prior to Step 1 of this process. It is also assumed that Changes have been tested before being implemented.

```
┌─────────────────────────────┐
│    Change Approval Process   │
│     (includes approval from  │
│        governance groups     │
│      and business owners)    │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│              1               │
│        Initiate Change       │
│         Request (CR)         │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│              2               │
│      Emergency Procedure     │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│              3               │
│   Categorization and Approval │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│              4               │
│   Implementation and Review  │
└─────────────────────────────┘
```
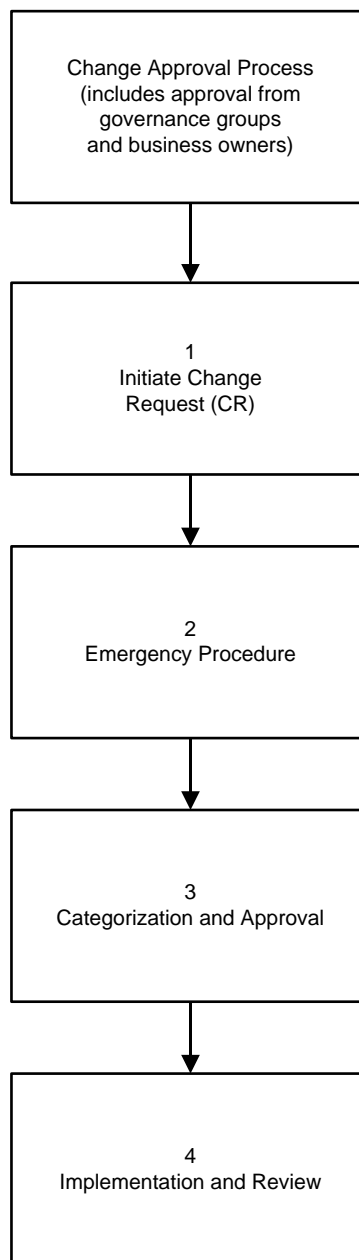
Figure 2 High Level Process Flow

7.0   Change Management Procedures and Process Flow Diagrams

7.1   Initiate Change Request

    a.   Detailed Process Flow

```
  From 2.5   From 4.6                    ( Start )
   ┌────┐    ┌────┐
   │1.1 │    │1.1 │
   └──┐ │    └ ┐  │
      ▼ ▼     ▼  │                    ┌──────────────┐
       (○)────────────────────────▶  │     1.1      │
                                      │ Need for a   │
                                      │  Change is   │
                                      │  identified  │
                                      └──────────────┘
                                                        ┌──────────────┐
                                                        │     "A"      │
                                                        │ CI information│
                                                        │   - CI       │
                                                        │ Viewer Process│
                                                        └──────────────┘
              ┌──────────────┐
    Yes ──────│ 1.2 Emergency│◀─────────────
              │     CR?      │
     │        └──────────────┘
     ▼              │
   ┌────┐          No
   │2.1 │           ▼
   └────┘    ┌──────────────┐
             │     1.3      │
             │ Change Initiator│
             │   submits    │
             │ Change Request (CR)│
             └──────────────┘
                     │
                     ▼
                   ┌────┐
                   │3.1 │
                   └────┘
```
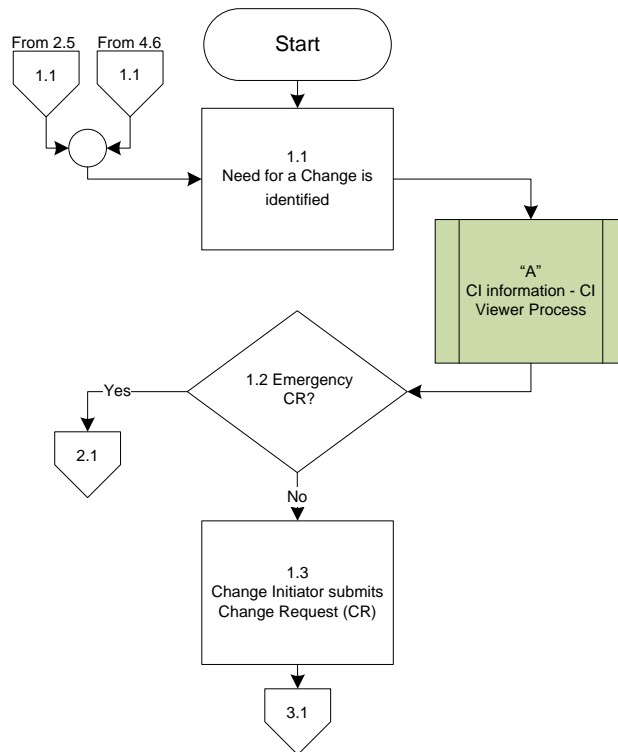
Figure 3 Initiate Change Request

    b.   Input to Procedure

        1.   Incident Report

        2.   Code and Problem (C&P) Tracker Report/Ticket

        3.   Change Request Form from IT Change Initiator

        4.   Configuration Item (CI) information from CI Viewer

        5.   List of Standard Pre-Approved Changes[2]

    c.   Output of Procedure

        1   Categorized and Prioritized Change Request (CR)

        2   Change Coordinator awareness of CR

        3   Possible Emergency Change

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[2] The list of Standard Pre-Approved Changes is automated, and should be available to requesters as a drop-down box when completing the Change Request Form. Standard Pre-Approved Changes are determined by workgroups; the drop-down list is populated and maintained by the Change Coordinator based on the information provided by the workgroups.

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
1.1 Need for a Change is identified	IT Change Initiator	A need for change is identified. It may originate in an Incident Report (HelpSU Ticket), a Code and Problem Tracker (C&P) Report/Ticket, and so on.

"A" CI Information – CI Viewer Process	IT Change Initiator	CI Viewer is used to retrieve information for the Configuration Item (CI) that will be impacted by the change and, all other "related" components (logical or physical) that may be also impacted due to the same change:
		   1) Risk and impact information
		   2) Stakeholder approvals
		This information should be recorded in the CR

1.2 Is it an Emergency CR?	IT Change Initiator Change Coordinator	If the change is an **emergency** (e.g. key system is down) change (as determined SME and/or client request), the change can be implemented immediately following the **Expedited Change Procedure.** Note that **urgent** changes should go through the regular process (3.0). If the change is neither emergency nor urgent, then it is a **routine** CR that can be forwarded to the **Categorization and Approval Procedure**.
1.3 Change Initiator submits Change Request (CR)	IT Change Initiator	An IT staff member submits a Change Request (CR) form, using the Change Management System (CMS). The Change Initiator fills in all basic information required for the CR to be considered. The CR should include a suggested date/time for implementation and identify all domain and sub-domain authorizers, if any. Note that reasonable categorization and prioritization is left to the IT Change Initiator and may be reviewed at weekly CAB meetings. **Standard Pre-Approved Changes:** The first time a change request is entered into the CMS that thereafter will become a Standard Pre-Approved Change, it must be entered as a routine **Minor** or **Significant** change as appropriate. After being approved by all domain/sub-domain authorizers this first time, the Change Coordinator will receive a notification of the request to create a Standard Pre-Approved stencil for future use. One the Change Coordinator creates the stencil it will be available for future use.

Table 3 Initiate Change Request Procedures

Related Process and Procedures

- Incident Management

    Ability to initiate Change Request (CR)

    Ability to integrate with Remedy Code ad Problem (C&P) Tracker

- Problem Management

    Ability to initiate Change Request (CR)

- Configuration Management

    Knowledge and ability to use the CI Viewer (BMC Remedy)

    Updates status of Change Request (CR)

7.2 Emergency Change Procedure
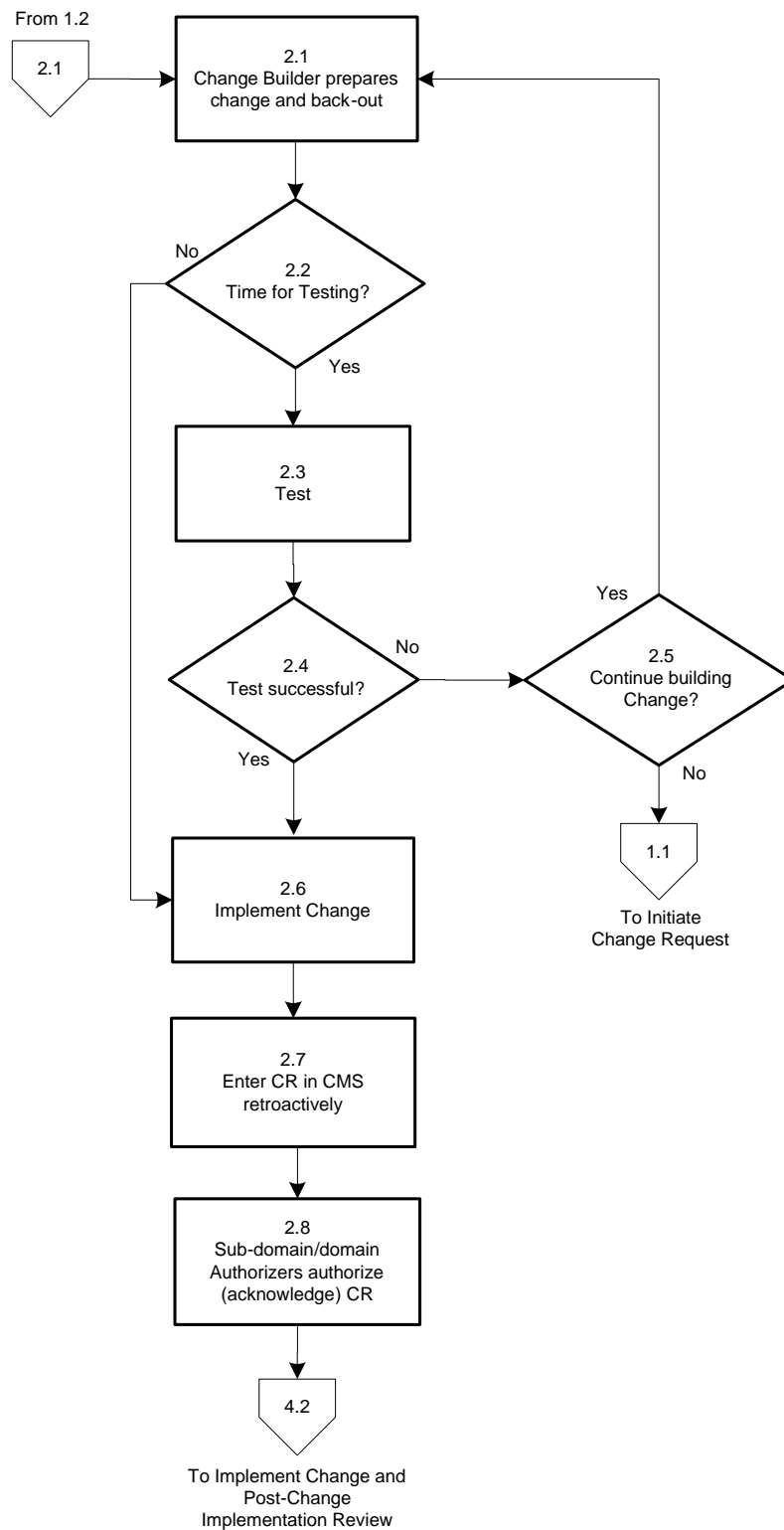
a. Detailed Process Flow

```
From 1.2

   [2.1]  ──────►  ┌──────────────────┐  ◄──────────────────┐
                   │ 2.1              │                     │
                   │ Change Builder   │                     │
                   │ prepares change  │                     │
                   │ and back-out     │                     │
                   └──────────────────┘                     │
                            │                               │
                            ▼                               │
              No      ◇ 2.2                                 │
         ◄────────── Time for Testing?                      │
         │                  │                               │
         │                 Yes                              │
         │                  ▼                               │
         │         ┌──────────────────┐                     │
         │         │ 2.3              │                     │
         │         │ Test             │                     │
         │         └──────────────────┘                     │
         │                  │                               │
         │                  ▼                  Yes          │
         │            ◇ 2.4      No     ◇ 2.5 ──────────────┘
         │          Test successful? ──► Continue building
         │                  │              Change?
         │                 Yes               │
         │                  │                No
         │                  ▼                ▼
         │         ┌──────────────────┐    [1.1]
         └───────► │ 2.6              │
                   │ Implement Change │    To Initiate
                   └──────────────────┘    Change Request
                            │
                            ▼
                   ┌──────────────────┐
                   │ 2.7              │
                   │ Enter CR in CMS  │
                   │ retroactively    │
                   └──────────────────┘
                            │
                            ▼
                   ┌──────────────────┐
                   │ 2.8              │
                   │ Sub-domain/domain│
                   │ Authorizers      │
                   │ authorize        │
                   │ (acknowledge) CR │
                   └──────────────────┘
                            │
                            ▼
                         [4.2]

                   To Implement Change and
                       Post-Change
                   Implementation Review
```

Figure 4 Emergency Change Procedures

   b.   Input to Procedure

          1   Change Request Form from IT Change Initiator

   c.   Output of Procedure

          1   Categorized Change Request (CR)

          2   Approved Minor, Significant or Major Change

          3   Approved Minor, Significant or Major Change scheduled

          4   Rejected Minor, Significant or Major Change scheduled

          5   Communication to Initiator of outcome

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
2.1 SME prepares change & change back-out if possible	SME	The SME builds the change and performs a functional test. The SME is also responsible for developing and documenting a back-out plan (in advance ideally). Generally, back-out means reverting to a previous, trusted version or state.
2.2 Time for testing?	SME	All changes will be tested whenever possible.
2.3 Test	SME	Urgent testing is performed.
2.4 Test successful?	SME	Verify if the test is successful.
2.5 Continue building change?	SME	If testing is not successful, the decision is made to either continue building the change or return to the Change Builder to start over.
2.6 Implement change	SME	Implement the change to the affected service.
2.7 Enter change request in Change Management System (CMS) retroactively	SME IT Initiator (Change Coordinator)	If successful, SME enters CR in the CMS retroactively, describing the change and reason for emergency change. The CMS automatically informs the IT Initiator and appropriate lists (determined by rules of who/which lists received notifications about which kinds of changes) that the change has been implemented. The IT Initiator may also inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
2.8 Domain/Sub-domain Authorizers authorize (acknowledge) CR	Domain/ Sub-domain Authorizers	Authorizers (a group which may include client authorizers) retroactively approve CR. This retroactive step is important for audit purposes.

Table 4 Procedures Emergency Change Procedures

Related Process and Procedures

- Configuration Management

- Updates status in Configuration Management Database (CMDB)

7.3   *Standard Pre-Approved Changes*

a.   Detailed Process Flow
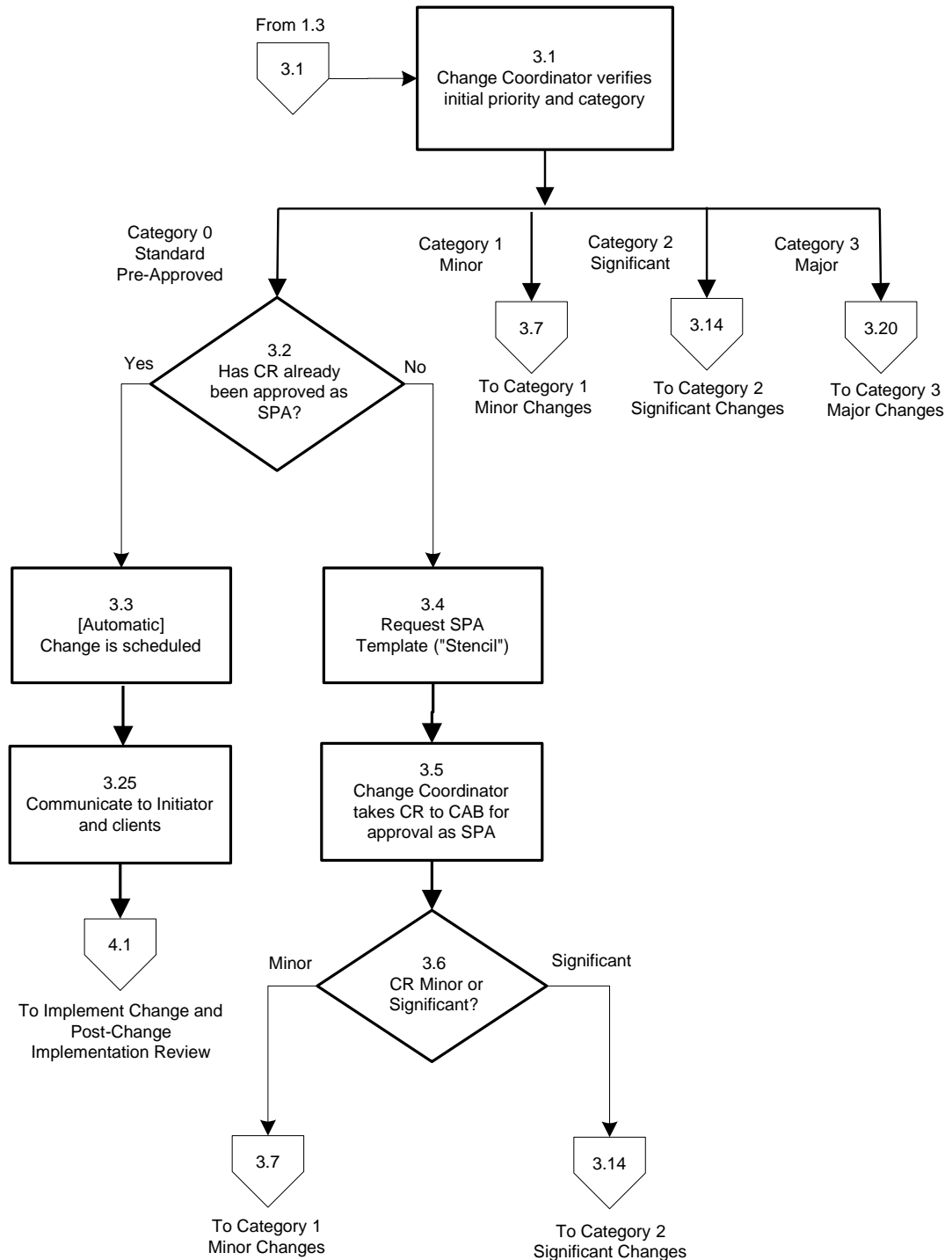

Figure 5 Category 0 Pre-Approved Changes

        b.   Inputs to Procedure

              1   Determination of Change Request Category and Priority (if any)

        c.   Outputs of Procedure

              1   Updated Forward Schedule of Changes (FSC) (which represents all authorized changes)

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description

3.1 Change Coordinator verifies initial priority and category	Change Coordinator	This step will occur **concurrently** with Steps 3.2, 3.7, 3.14, and 3.20 during the first six months after implementation of the new process. This means that we will rely on the IT Initiator to set the category for a CR based on the following pre-defined categories:
		    Category 0 – Standard Pre-Approved
		    Category 1 – Minor Impact (General, "Fix of Opportunity")
		    Category 2 – Significant Impact
		    Category 3 – Major Impact
		After this initial period, the Change Coordinator may begin reviewing the Change Request (CR) and verifying initial priority as a step prior to routing for approval and authorization.

3.2 Category 0-Is the CR already approved as a Standard Pre-Approved Change?	IT Change Initiator	The IT Change Initiator selects the appropriate stencil that has already been approved and created as a Standard Pre-Approved Change. This would mean it would not need domain approval or to be reviewed or approved by the Change Coordinator or the CAB.
3.3 Category 0-Change is scheduled automatically	[Automated]	Change Priority and Category are established, and the Forward Schedule of Changes (FSC) is updated automatically. The Change Coordinator can coordinate scheduling and resolve scheduling conflicts if needed.
3.4 Category 0-Request SPA Template ("stencil")	IT Change Initiator	The IT Change Initiator notes in a check-box that this Change Request needs to be approved as a Standard Pre-Approved Change template (i.e., "stencil"), which requires that it be reviewed or authorized by the Change Coordinator or the CAB.
3.5 Category 0-Change Coordinator takes CR to CAB	Change Coordinator	The Change Coordinator collects all first requests for Standard Pre-Approved Changes so that they can be discussed and approved by the CAB and thereafter become SPA templates ("stencils") in the CMS. ***Note that this step will occur concurrently with Step 3.4.***
3.6 Category 0 Is CR a Minor or Significant Change?	IT Change Initiator Change Coordinator	The first time a change request is entered into the CMS that thereafter will become a Standard Pre-Approved Change, it must be entered as a routine **Category 1 (Minor)** or **Category 2 (Significant)** change as appropriate. After being approved by all domain/sub-domain authorizers this first time, the Change Coordinator will receive a notification of the request to create a Standard Pre-Approved stencil for future use. Once the Change Coordinator creates the stencil, it will be available for future use
3.25 Communicate to Initiator and Clients	[Automated] IT Initiator	After the CAB or CAB MCR meeting, the updated Forward Schedule of Changes (FSC) is published. Clients are typically notified by email only if a change has ***not*** been approved. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
3.25 Communicate to Initiator and Clients	[Automated] IT Initiator	The CMS automatically informs the IT Initiator and appropriate lists (determined by rules of who/which lists received notifications about which kinds of changes) that the change has been scheduled. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).

Table 5 Procedures Category 0 Standard Pre-Approved Changes

7.4 *Category 1 – Minor Changes*

     a.   Detailed Process Flow

3.1
Change Coordinator verifies initial priority and category

From Category 0-3.1

3.7

Category 1 Minor

3.7
Is this an Urgent CR?

No

Yes

3.7

From Category 0-3.6

3.8
[Automatic]
CR flagged as urgent

3.9
Minor (General) or Minor (Fix of Opportunity)?

Minor Changes ("Fix of Opportunity")

Minor Changes (General)

3.10
Implement Change

3.12
Change Coordinator reconciles/raises issues (if any)

3.11
Domain/Sub-domain Authorizers retroactively authorize CR

3.13
Domain/Subdomain Authorizers authorize CR?

Yes

No

Go to 3.1

3.25
Communicate to Initiator and clients

3.26
CR Rejected; Initiator informed

3.27
Reschedule CR?

Yes

No

4.1

To Implement Change and Post-Change Implementation Review
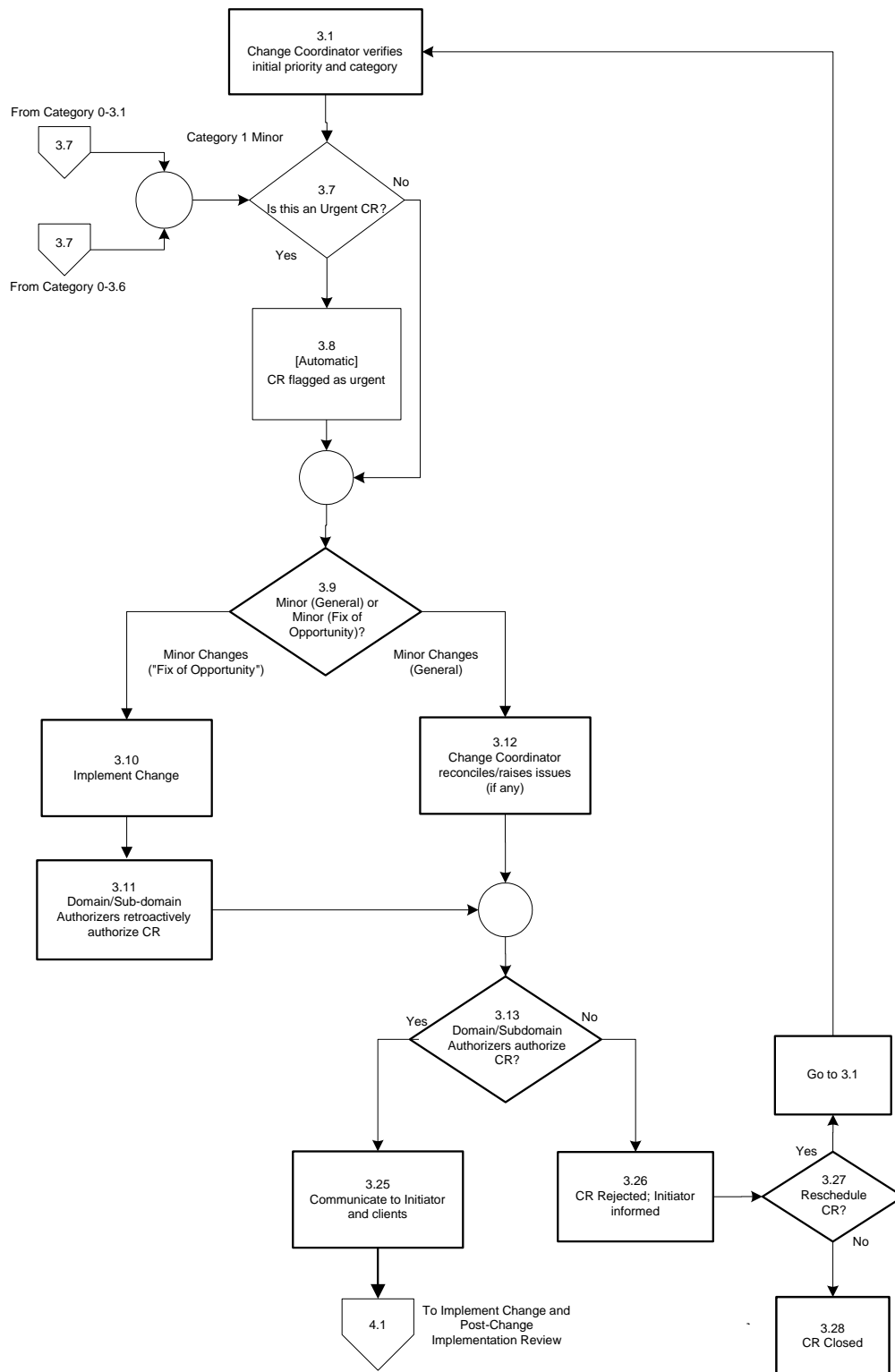
3.28
CR Closed

Figure 6 Category 1 Minor Changes

   b. Input to Procedure

     1 Determination of Change Request Category and Priority (if any)

   c. Output of Procedure

     1 Updated Forward Schedule of Changes (FSC) (which represents all authorized changes)

     2 Rejected/Backed-out Change Request (CR)

     3 Possible Re-prioritized Change Request (CR)

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
3.1 Change Coordinator verifies initial priority and category	Change Coordinator	The Change Coordinator will begin reviewing the Change Request (CR) and verifying initial priority as a step prior to routing for approval and authorization after the initial pilot period after implementation of the new system and process
3.7 Category 1 Is this an Urgent Change Request?	IT Change Initiator	The IT Change Initiator selects an Urgent FOO, Urgent Minor, Urgent Major, or Urgent Significant stencil
3.8 Category 1 Change Request is flagged as urgent	[Automated]	An urgent change request still requires authorization and approval although the recommended lead-time may be circumvented.
3.9 Category 1 Is the Change Request a Minor Change (General) or a Minor Change ("Fix of Opportunity")?	IT Change Initiator / SME	The IT Change Initiator selects a Routine FOO, Routine Minor, Urgent FOO, or Urgent Minor stencil
3.10 Category 1 – Fix of Opportunity Implement change	IT Change Initiator / SME	Implement the change to the affected service.
3.11 Category 1 Fix of Opportunity Domain/Sub-Domain Authorizers authorize (acknowledge) CR retroactively	IT Change Initiator / SME Domain/ Sub-domain Authorizers	IT Change Initiator / SME may have entered CR in the CMS retroactively, describing the change and reason for change (etc.). Authorizers retroactively approve CR. This retroactive step is important for audit purposes.
3.12 Category 1 Change Coordinator reconciles/raises scheduling issues	Change Coordinator	The Change Coordinator reconciles any CRs that have scheduling issues and updates the FSC. Note that the Change Coordinator does not have the authority to stop a CR. The job of the Change Coordinator is to raise/reconcile scheduling issues where possible/necessary. The system informs the Change Advisory Board (CAB) of the actions taken.
3.13 Category 1 Domain/Sub-domain Authorizers authorize CR	Domain/Sub-domain Authorizers	Authorizers (a group which may include client authorizers) approve CR. If even one domain/sub-domain authorizer does not approve the CR, then the default is an automatic rejection of the CR.
3.25 Communicate to Initiator and Clients	[Automated] IT Initiator	The CMS automatically informs the IT Initiator and appropriate lists (determined by rules of who/which lists received notifications about which kinds of changes) that the change has been scheduled. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
3.26 CR rejected, Initiator informed	Change Coordinator IT Initiator	If it is not authorized, the initiator is informed so that s/he can initiate closing of the CR and/or rescheduling. The IT Initiator may work with the Change Coordinator to reschedule. It may also be appropriate and/or necessary to inform clients/customers about the status of the change request at this time.
3.27 Can the change be rescheduled?	Change Coordinator IT Initiator	The change is rescheduled if possible. The IT Initiator does a date change in the system, perhaps consulting or coordinating with the Change Coordinator.
3.28 CR Closed	Change Coordinator IT Initiator	If the change cannot be rescheduled, then the CR is closed, and the IT Initiator will have to submit a new change request.

Table 6 Category 1 Minor Changes

Related Process and Procedures

- Updated status in Configuration Management Database (CMDB)

- Service Level Management

- Required information for Service Level Agreement (SLA)

7.5   Category 3 – Significant Changes

a.   Detailed Process Flow

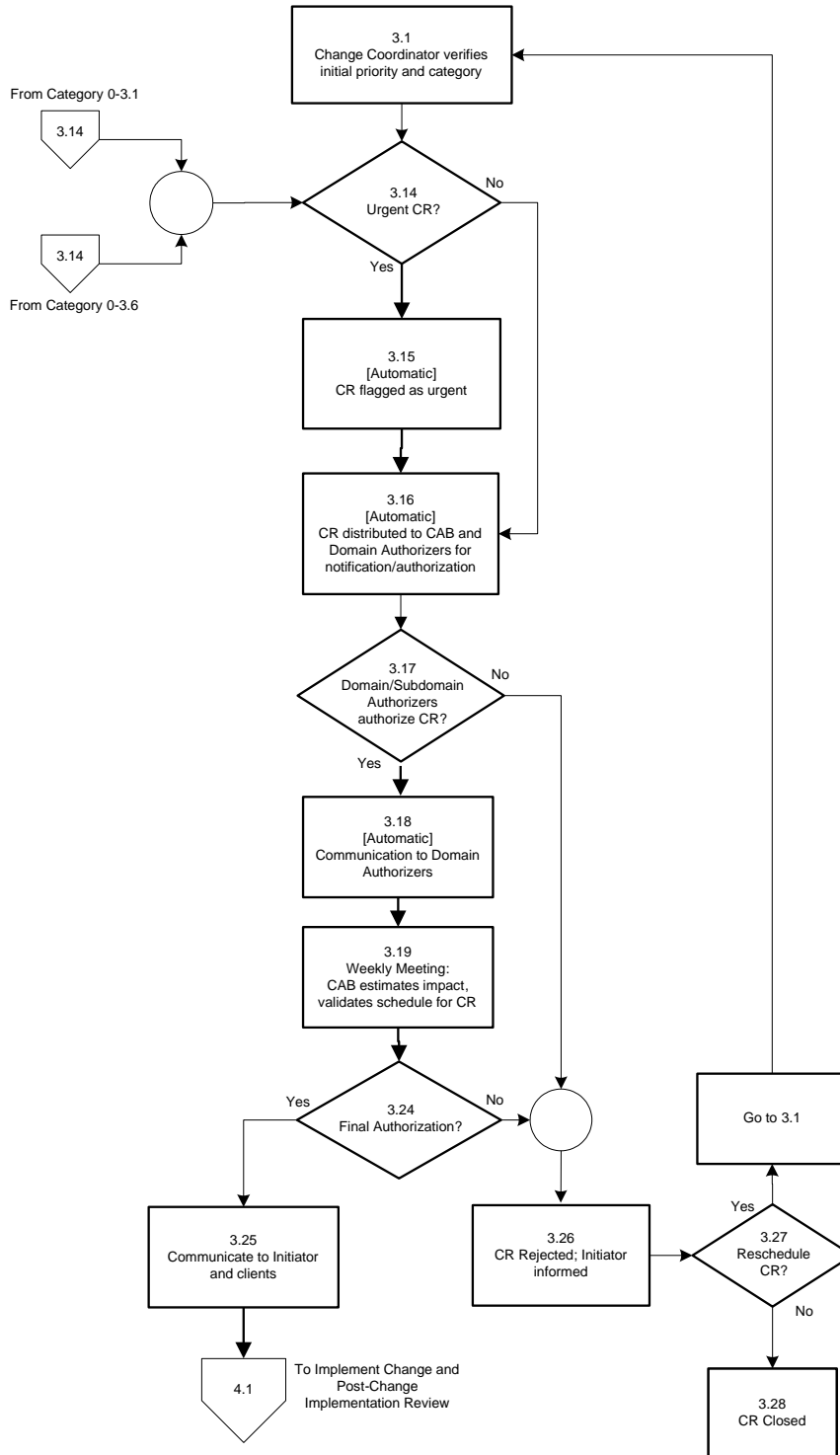**Figure 7 Category 2 Significant Changes**

      b.   Input to Procedure

          1   Determination of Change Request Category and Priority (if any)

      c.   Output of Procedure

          1   Updated Forward Schedule of Changes (FSC) (which represents all authorized changes)

          2   Rejected/Backed-out Change Request (CR)

          3   Possible Reprioritized Change Request (CR)

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
3.1 Change Coordinator verifies initial priority and category	Change Coordinator	The Change Coordinator will begin reviewing the Change Request (CR) and verifying initial priority as a step prior to routing for approval and authorization after the initial pilot period after implementation of the new system and process
3.14 Category 2 Is this an Urgent Change Request?	IT Change Initiator	The IT Change Initiator selects an Urgent FOO, Urgent Minor, Urgent Major, or Urgent Significant stencil.
3.15 Category 2 Change Request is flagged as urgent	[Automated]	An urgent change request still requires authorization and approval although the recommended lead-time may be circumvented.
3.16 Category 2 Change Request is circulated to the CAB and Domain/Sub-Domain authorizers	[Automated] Change Coordinator CAB	The Change Coordinator uses the system to circulate the CR to the CAB members, and relevant domain authorizers for assessment prior to the formal CAB meeting. See the table of recommended lead times for information on the appropriate lead time for CRs.
3.17 Category 2 Domain/Sub-domain Authorizes CR	Domain/Sub-domain Authorizers	Authorizers (a group which may include client authorizers) approve CR. If even one domain/sub-domain authorizer does not approve the CR, then the default is an automatic rejection of the CR.
3.18 Category 2 Communicate to Initiator and Clients	[Automated] IT Initiator	The CMS automatically informs the IT Initiator and appropriate lists (determined by rules of who/which lists received notifications about which kinds of changes) that the change has been approved. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
3.19 Category 2 CAB estimates impact; validates schedule for CR	Change Advisory Board (CAB)	At regular weekly CAB meeting, the CAB reviews CR and estimates resource requirements, impact, urgency (priority), and validates schedule for CR. An outcome of this meeting is the updated Forward Schedule of Changes (FSC).
3.24 Final Authorization?	CAB or CAB MCR	The CAB or CAB MCR finalize the Forward Schedule of Changes (FSC), which now represents all authorized changes that have been scheduled for implementation. The CAB or CAB MCR can also decide to reject a CR.
3.25 Communicate to Initiator and Clients	[Automated] IT Initiator	After the CAB or CAB MCR meeting, the updated Forward Schedule of Changes (FSC) is published. Clients are typically notified by email only if a change has **not** been approved. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
3.26 CR rejected, Initiator informed	Change Coordinator IT Initiator	If it is not authorized, the initiator is informed so that s/he can initiate closing of the CR and/or rescheduling. The IT Initiator may work with the Change Coordinator to reschedule. It may also be appropriate and/or necessary to inform clients/customers about the status of the change request at this time.
3.27 Can the change be rescheduled?	Change Coordinator IT Initiator	The change is rescheduled if possible. The IT Initiator does a date change in the system, perhaps consulting or coordinating with the Change Coordinator.
3.28 CR Closed	Change Coordinator IT Initiator	If the change cannot be rescheduled, then the CR is closed, and the IT Initiator will have to submit a new change request.

Table 7 Category 2 Significant Changes

Related Process and Procedures

- Updated status in Configuration Management Database (CMDB)

- Service Level Management

- Required information for Service Level Agreement (SLA)

7.6   *Category 3 – Major Changes*

a.   Detailed Process Flow

```
                          ┌─────────────────────────┐
                          │         3.1             │
                          │ Change Coordinator verifies
                          │ initial priority and category│◄─────────┐
                          └─────────────────────────┘               │
                                     │                               │
From Category 0-3.1          ┌───────▼─────────────┐                 │
    ┌─────────┐              │        3.20         │                 │
    │  3.20   │─────────────►│     [Automatic]     │                 │
    └─────────┘              │ CR distributed to CAB-MCR             │
                             │ and Domain Authorizers for            │
                             │ notification/authorization│           │
                             └─────────────────────┘                 │
                                     │                               │
                               ◇ 3.21 ◇    No                        │
                             Domain/Subdomain ──────────┐            │
                             Authorizers authorize       │           │
                                   CR?                   │           │
                                   │ Yes                 │           │
                             ┌─────▼───────┐             │           │
                             │    3.22     │             │           │
                             │ [Automatic] │             │           │
                             │ Communication to Domain    │          │
                             │  Authorizers │             │          │
                             └─────────────┘             │           │
                                   │                     │           │
                             ┌─────▼───────┐             │           │
                             │    3.23     │             │           │
                             │ Weekly Meeting:            │          │
                             │ CAB MCR estimates          │          │
                             │ impact, validates schedule │          │
                             │   for CR     │             │          │
                             └─────────────┘             │           │
                                   │                     │           │
          Yes         ◇ 3.24 ◇     No                    │           │
        ┌────── Final Authorization? ──────► ◯ ◄─────────┘           │
        │                                    │                       │
  ┌─────▼──────┐                       ┌─────▼──────┐     ◇ 3.27 ◇   │
  │   3.25     │                       │   3.26     │     Reschedule │
  │ Communicate to Initiator           │ CR Rejected; Initiator──► CR? │
  │ and clients │                      │  informed  │         │ Yes ─┘
  └────────────┘                       └────────────┘         │ No
        │                                               ┌─────▼──────┐
    ┌───▼───┐                                           │   3.28     │
    │  4.1  │                                           │ CR Closed  │
    └───────┘                                           └────────────┘
  To Implement Change and
     Post-Change
  Implementation Review
```
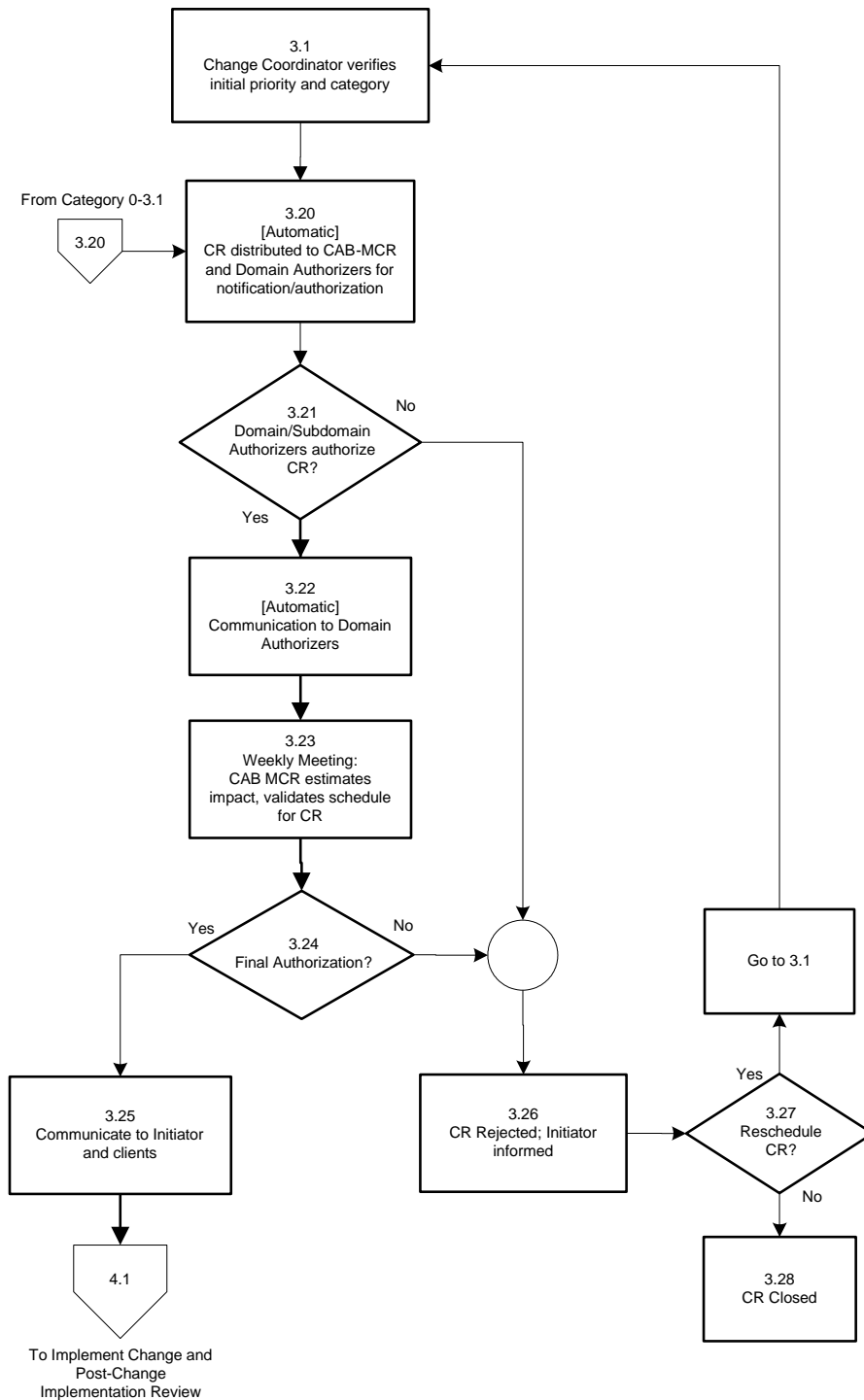
Figure 8 Category 3 Major Changes

b.   Input to Procedure

1   Determination of Change Request Category and Priority (if any)

c.   Output of Procedure

1   Updated Forward Schedule of Changes (FSC) (which represents all authorized changes)

2   Rejected/Backed-out Change Request (CR)

3   Possible Reprioritized Change Request (CR)

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
3.1 Change Coordinator verifies initial priority and category	Change Coordinator	The Change Coordinator will begin reviewing the Change Request (CR) and verifying initial priority as a step prior to routing for approval and authorization after the initial pilot period after implementation of the new system and process
3.20 Category 3 Change Coordinator forwards CR to CAB-MCR group	Change Coordinator	The Change Coordinator determines the appropriate CAB-Major Change Review (CAB MCR) committee members to review the Major Impact CR, and schedules CAB MCR meeting.
3.21 Category 3 Domain/Sub-domain Authorizes CR	Domain/Sub-domain Authorizers	Authorizers (a group which may include client authorizers) approve CR. If even one domain/sub-domain authorizer does not approve the CR, then the default is an automatic rejection of the CR.
3.22 Category 3 Communicate to Initiator and Clients	[Automated] IT Initiator	The CMS automatically informs the IT Initiator and appropriate lists (determined by rules of who/which lists received notifications about which kinds of changes) that the change has been approved. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
3.23 Category 3 CAB Major Change Review Committee estimates impact, validates schedule	CAB Major Change Review (CAB MCR) Committee	CAB MCR estimates resource requirements, impact, urgency (priority), and validates schedule for CR. A schedule for major change is agreed upon and communicated to Change Coordinator for Forward Schedule of Changes (FSC) update.
3.24 Final Authorization?	CAB or CAB MCR	The CAB or CAB MCR finalize the Forward Schedule of Changes (FSC), which now represents all authorized changes that have been scheduled for implementation. The CAB or CAB MCR can also decide to reject a CR.
3.25 Communicate to Initiator and Clients	[Automated] IT Initiator	The CMS automatically informs the IT Initiator and appropriate lists (determined by rules of who/which lists received notifications about which kinds of changes) that the change has been scheduled. The IT Initiator may inform business/service owners and clients/customers as appropriate and necessary (and/or as is required by an SLA).
3.26 CR rejected, Initiator informed	Change Coordinator IT Initiator	If it is not authorized, the initiator is informed so that s/he can initiate closing of the CR and/or rescheduling. The IT Initiator may work with the Change Coordinator to reschedule. It may also be appropriate and/or necessary to inform clients/customers about the status of the change request at this time.
3.27 Can the change be rescheduled?	Change Coordinator IT Initiator	The change is rescheduled if possible. The IT Initiator does a date change in the system, perhaps consulting or coordinating with the Change Coordinator.
3.28 CR Closed	Change Coordinator IT Initiator	If the change cannot be rescheduled, then the CR is closed, and the IT Initiator will have to submit a new change request.

Table 8 Category 3 Major Changes

Related Process and Procedures

- Updated status in Configuration Management Database (CMDB)

- Service Level Management

- Required information for Service Level Agreement (SLA)

7.7 *Implement Change and Post-Change Implementation Review*

a.   Detailed Process Flow

       1   Implement Change and Post-Change Implementation Review

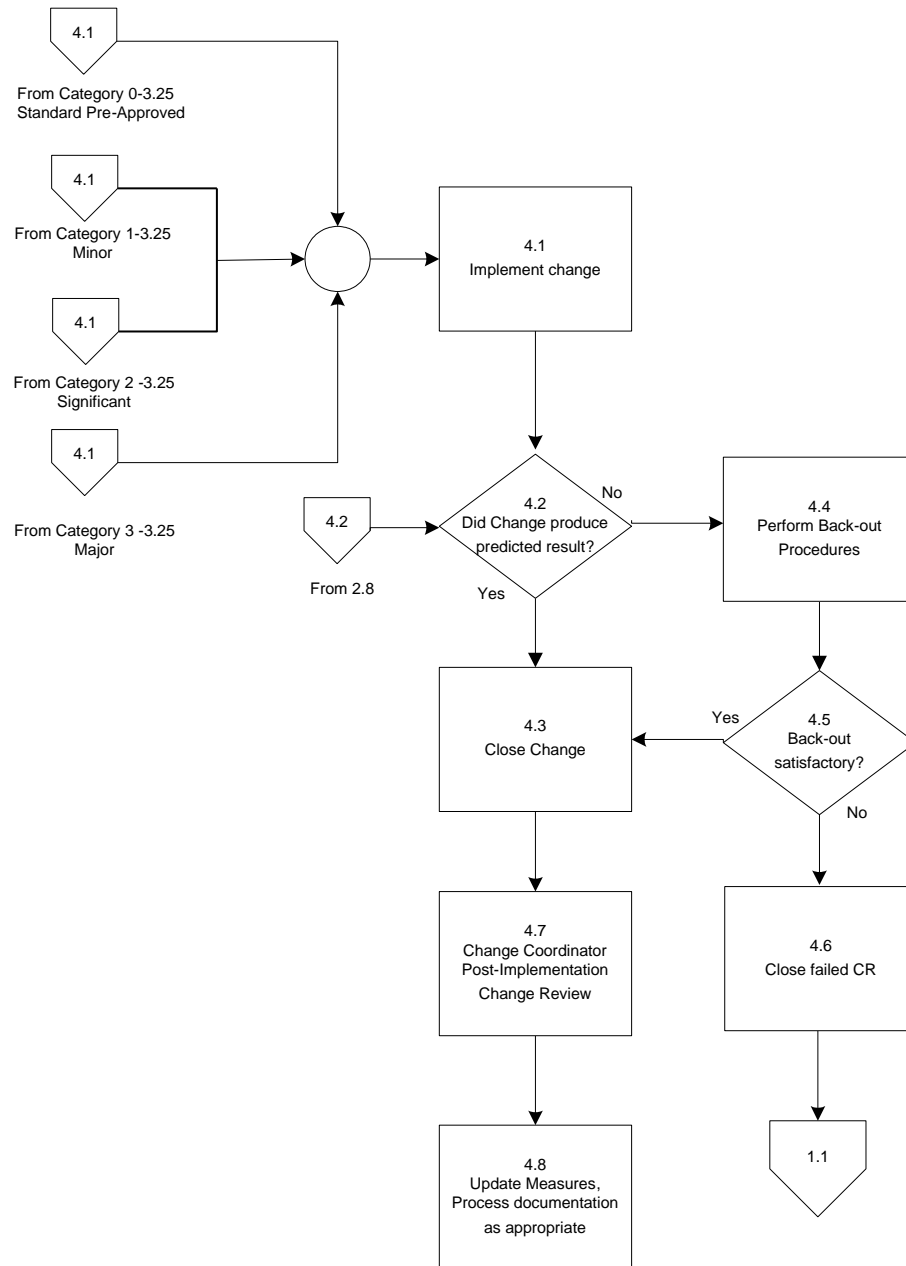**Figure 9 Implement Change and Post-Change Implementation Review**

   b. Inputs to Procedure

    1 Implemented change

    2 Change results

    3 Back-out plans (as documented in initial Change Request)

   c. Outputs of Procedure

    1 Successful/Unsuccessful change and communication to all involved, including clients

    2 Post Implementation Review (PIR) results

    3 Possible revised/new Change Management Process documentation

Related Process and Procedures

- Configuration Management

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
4.1 Implement Change	SME Change Coordinator Change Initiator	Implement change. Note a change may need to be cancelled for unexpected reasons (e.g., a disk failure that pre-empts the change, etc.) This may require that the CR be revised and/or rescheduled. **Note that some clients/business and service owners (such as the Emergency Rooms in the Hospitals) may require a final confirmation that a change has been scheduled before implementation.**
4.2 Did change produce predicted result?	SME Change Coordinator Change Initiator	The change is successful if the change has produced the desired and expected results. Otherwise back-out plans are implemented. **Note that this is a technical review that may also require client and/or business/service owner agreement on the outcome of the change.**
4.3 Close Change	IT Initiator	Successful CR is closed by the IT Initiator. Standard Pre-Approved CRs may be automatically closed.
4.4 Perform back-out procedures	SME	Back-out plans, which were documented as part of the initial CR, are implemented
4.5 Back-out Satisfactory?	SME	If the back-out works, then the CR may be closed. If the back-out fails, the SME may need to work with their manager to determine a course of action. In either case, the fact that a change has been backed-out may require requesting of a new/revised CR.
4.6 Close failed CR	IT Initiator/SME	Failed CR is closed and the reason for failure is documented. A new/revised change request (which may now be urgent or emergency because of the failed back-out) may be requested.
4.7 Change Coordinator Post-Implementation Change Review (PIR)	Change Coordinator Change Advisory Board (CAB) or CAB MCR (as needed)	After a week, the Change Coordinator reviews all implemented changes and involves the Change Advisory Board (CAB) members for assistance in the review process. **This is not a technical review.** The results will be used as input for continuous improvement activities for the Change Management process. The review should address the following: • Objectives/expectations were met • No unexpected, undesirable side-effects • Resources used to implement the change were as planned • Users are content with the results
4.8 Update measures (KPIs), process documentation	Change Coordinator	Change Coordinator updated process documentation based on the outcomes of the Post-Implementation Change Review.

Table 9 Implement Change and Post-Change Implementation Review

Related Process and Procedures
• Configuration Management

7.8   *CI Information – CI Viewer Process*

a.   Detailed Process Flow
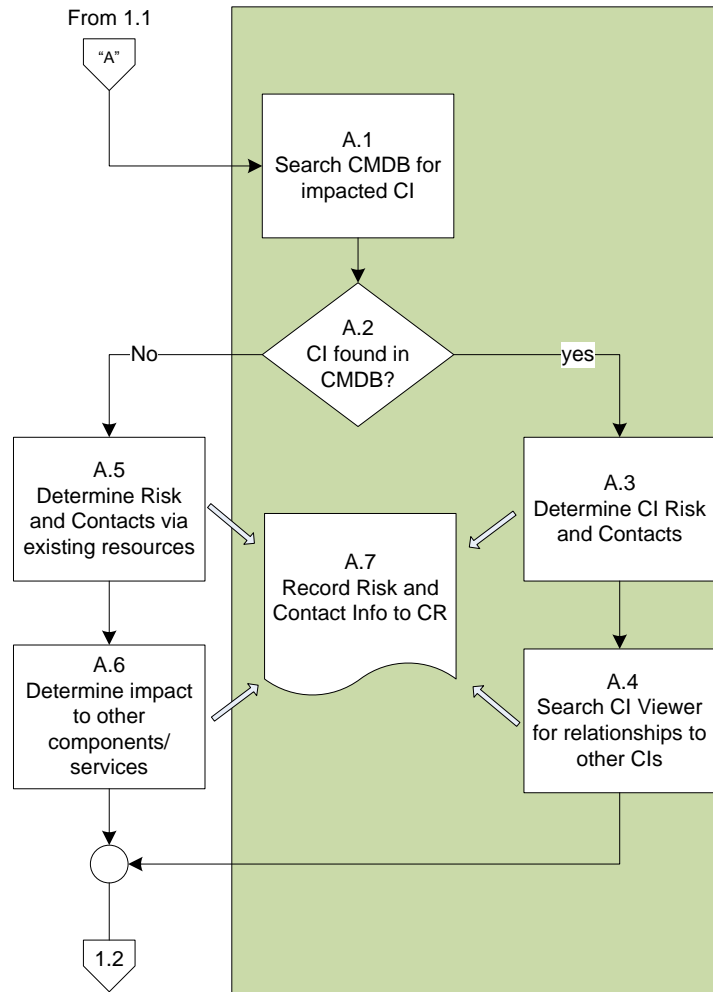

Figure 10 – CI Information – CI Viewer Process

      b.   Inputs to Procedure

          1   CI Viewer access

          2   Component Name to search for in CI Viewer

      c.   Outputs of Procedure

          1   CI Name, impact and urgency information

          2   Relationships to other logical (applications, business services) or physical components

          3   Domain and sub-domain owner information

Related Process and Procedures
      BMC Remedy/CI Viewer

Procedures

Procedure Number	Role(s) Involved	Detailed Procedure Description
A.1 Search CMDB for Impacted CI	IT Change Initiator	Use the BMC Remedy application to search CMDB for the CI of the component/Svc that will be impacted by the change.
A.2 CI Found in CMDB?	IT Change Initiator	Did the search result in the find of any CIs? • If yes, go to A.3 • If no, go to A.5
A.3 Determine CI Risk and Contacts	IT Change Initiator	The CI record includes the Impact and Urgency information which can be used to calculate Risk. It also includes
A.4 Search CMDB for relationships to other CIs	IT Change Initiator	Use BMC Remedy to search CMDB for all CIs that have relationships established with the
A.5 Determine Risk and Contacts via existing resources	IT Change Initiator	Use existing methods for assessing risk for the components that will be impacted by the change. Resources may include: • Documentation • SMEs • Contact lists
A.6 Determine impact to other components/services	IT Change Initiator	Use existing methods for assessing impact to other components or services that that may be impacted by the change. Resources may include: • Documentation • SMEs • Service catalog
A.7 Record Risk and Contact info to CR	IT Change Initiator	The risk, domain and sub-domain contacts and impact to other components and/or services should be recorded to the CR. (Maintenance windows are also important but will be available for use at a later time, phase II of the project).

Table 10 - CI Viewer Process