

## NIH Change Management Best Community Practice V1.0

### Status of this Memo

This document proposes a Best Community Practice for the National Institutes of Health (NIH) and requests discussion and suggestions for improvements. Distribution of this memo is unlimited.

### Table of Contents

1	Introduction.....	1
2	Process Step Descriptions .....	1
2.1	Identify Business Need.....	1
2.2	Identify Change .....	1
2.3	Document Business Need.....	2
2.4	Create Change Request .....	2
2.5	Refine Requirements .....	3
2.6	Provide Initial Internal Approval .....	3
2.7	Determine Organizational Impact .....	3
2.8	Provide Final Internal Approval.....	4
2.9	Plan and Schedule Work .....	4
2.10	Provide Final CAB Approval .....	4
2.11	Communicate Planned Change to NIH IT Technical Community.....	4
2.12	Perform Change .....	5
2.13	Determine Change Outcomes .....	5
2.14	Close .....	5
3	References.....	5
4	Contact .....	6
5	Security Considerations .....	6
6	Changes.....	6
7	Author's Address .....	7
8	Acronym Glossary .....	8

# 1 Introduction

The purpose of this NIHRFC is to provide a model for IT Change Management & Control within NIH's diverse and federated technology environment. Organizations utilizing this framework in implementing their own Change Management and Control processes will find themselves better able to integrate these processes into the larger NIH IT environment. As a framework, this document deals in general principles, leaving details to the implementing organization, who may further consult the profuse body of literature on this topic.

Release Management (RM) and Service Asset & Configuration Management (SACM) are both closely related to IT Change Management. Though beyond the scope of this document, these disciplines are worthy of consideration when implementing Change Management.

## 2 Process Step Descriptions

The steps in the Best Community Practice Business Process Model are outlined below.

References to the Office of General Counsel's Information Technology Infrastructure Library (ITIL), an internationally-recognized standard for Information Technology Service Management (ITSM), are used throughout the description.

### 2.1 *Identify Business Need*

An organization identifies an area for improvement or an opportunity for business growth.

*Description:* An organization simply acknowledges that such a business need exists. There is little qualitative filtering of the business need taking place at this point.

There is no equivalent activity in ITIL Change Management. In reality, this taps into processes under ITIL's Service Strategy and Service Design phases. The list of possible triggers that are input to this first step is varied and diverse, stemming from processes across the ITIL lifecycle—the triggers specified in the diagram are meant to be illustrative, not comprehensive.

### 2.2 *Identify Change*

The organization identifies one or more technology services or components (Configuration Items) that may need to be created, updated, modified, or deleted in order to fulfill this business need. This is the definition of a change.

*Description:* The organization simply recognizes that technology may need to be involved in addressing the business need, and a generally identifies the services that may be impacted. Still, there remains little filtering or analysis. Obviously, if there is no technology involved in satisfying the business need, the IT process ends here.

This step loosely corresponds to the “Create Request for Change” activity in ITIL Change Management (which is separate from the “Record RFC” step).

## **2.3 Document Business Need**

The organization documents the business need for this change, capturing ITIL’s first three R’s of Change Management:

- Who RAISED the change?
- What is the REASON for the change?
- What is the RETURN required from the change?

*Description:* At this phase, the organization takes a more detailed look at their business need and determines what are the exact desired business outcomes for the change. If the organization can not adequately document the need and answer the first three “R’s” to the satisfaction of leadership, the change may die here. If a change passes this step it is an acknowledgement by the organization that it wants to expend the resources to develop detailed technical requirements.

This is also the point at which an organization may realize that the change they are proposing is more than just a single technical change but is rather a large-scale project which will generate many changes and should be managed by an appropriate project management methodology, such as the Enterprise Performance Life Cycle (EPLC). Each of the changes generated by such a project would then, individually, flow through the Change Management process.

In our process model we have split up the ITIL Assess and Evaluate Change activities across multiple steps of our own as we apply various federated levels of governance and checkpoints. This step sort corresponds to part of that activity in ITIL, but focuses on the business drivers for the change. Note that in ITIL, these activities come AFTER the Request For Change (RFC) is recorded.

It is also worth noting that this step again bleeds backwards into the Service Design and Service Strategy ITIL phases.

## **2.4 Create Change Request**

The organization formally records the RFC. They assign the RFC a unique identifier and relate the RFC back to any trigger documentation that may be relevant (Incident records, Problem records, Event records, et al). Impacted Configuration Items should be noted to the extent that they have already been identified.

*Description:* This is the point at which a formal Change Request (CR) is created in whatever system is being used by the organization in question.

This roughly corresponds to ITIL's Create RFC activity.

## **2.5 Refine Requirements**

The organization determines specific business and technical requirements for the change. They develop a full Requirements Analysis.

*Description:* The organization will now develop a formal requirements document outlining the precise nature of the technical changes needed in order to fulfill the RFC. When completed, the organization will understand precisely what is being asked for.

This corresponds to portions of ITIL's Assess and Evaluate Change activities.

## **2.6 Provide Initial Internal Approval**

The organization determines that the requirements and business need justify performing a full organizational impact assessment, including a security analysis.

*Description:* This is the first formal governance in the model and may be applied at varying levels in the organization, depending on organizational size, requirements, and federation models. This approval may come from a line manager, an executive, or a Change Advisory Board.

Essentially, this step just indicates that the change is worth assessing further based upon the business needs and the requirements. It corresponds to portions of the Assess and Evaluate Change activities in ITIL.

## **2.7 Determine Organizational Impact**

The organization fully vets the change, answering the remaining four "R's" of ITIL Change Management:

- What are the RISKS of the change?
- What RESOURCES are required to deliver the change?
- Who is RESPONSIBLE to build, test, and implement the change?
- What is the RELATIONSHIP between the change and other changes?

The organization *must* fully identify all affected Configuration Items in this step.

*Description:* This organization engages in more of the ITIL Assess and Evaluate activities. When completed, the organization will fully understand the risks and impacts of the proposed change.

## **2.8 Provide Final Internal Approval**

Obtain authorization for scheduling and designing from appropriate authority.

*Description:* As with the initial internal approval, this approval may come from any one of various levels in the organization, depending. This is the point at which the organization determines that the risks and benefits justify developing a full implementation plan and scheduling the change.

This corresponds to part of the Authorize activity in ITIL.

## **2.9 Plan and Schedule Work**

The organization develops a full set of design and implementation documents, including:

- Design documentation
- Test Plan
- Communications Plan
- Implementation/Release Plan
- Rollback Plan

When this step is completed, the work has been fully designed, planned, and preliminarily scheduled.

*Description:* Completes the ITIL Assess and Evaluate activities.

## **2.10 Provide Final CAB Approval**

The change is given a green light by the highest IC-level CAB.

*Description:* Completes the ITIL Authorize Change activities. Any future changes to the release schedule should be communicated back to the CAB (or ECAB for an emergency change).

## **2.11 Communicate Planned Change to NIH IT Technical Community**

The IC posts the change to the central repository (initially the Maintenance and Outage Calendar) for a two-business-day technical review by the NIH community. They also execute the pre-release components of their Communications plan.

IT and facilities organizations at NIH routinely review the central repository and raise concerns immediately. The organization raising the concern and the organization sponsoring the change work together to address any issues.

*Description:* Part of this step is included in the ITIL Communications activities, but much of it is NIH-specific.

## **2.12 Perform Change**

The organization executes the Implementation/Release Plan and the Test Plan. They also complete the execution of the Communications Plan.

*Description:* From an ITIL perspective, this is actually a hand off to the Release & Deployment Management and the Service Validation & Testing processes. Within the ITIL Change Management Process it is referred to as Co-ordinate Change Implementation.

## **2.13 Determine Change Outcomes**

The organization reviews the outcome of the change. This includes the following:

- Review the Test Results and Resolution Report to determine if the change was performed properly.
- Review the change itself to ensure it meets the requirements defined earlier in the process and that it conforms to the approved design documentation.
- Review the actual business impact of the change to ensure that it meets the business need as originally defined.

If outcome deficiencies exist, the process may need to be re-started at some point to get the desired outcomes.

*Description:* Corresponds to parts of the Review and Close Change Record activities in ITIL.

## **2.14 Close**

The organization documents outcomes and closes the RFC.

*Description:* Completes the Review and Close Change Record activities in ITIL.

# **3 References**

Office of Government Commerce (2007). *Service Transition*. London: Author.

## 4 Contact

To contact the NIHRFC Editor, send an email message to [EnterpriseArchitecture@mail.nih.gov](mailto:EnterpriseArchitecture@mail.nih.gov). To comment on this or other NIHRFCs, visit the NIHRFC Discussion Area at <http://enterprisearchitecture.nih.gov/YourPart/Collaborate/NRFCDiscussionArea.htm>.

## 5 Security Considerations

A properly-implemented IT Change Management process enhances organizational IT security by institutionalizing change impact assessments, thus reducing the risk of unintended consequences of change and all the associated service impacts.

## 6 Changes

Version	Date	Change	Authority	Author of Change
0.1	5/26/2011	First EA Draft	NIHRFC0001/BCP0001	Geoffrey Marsh
0.2	06/09/2011	Formatting Changes	NIHRFC001	Zahra Ashraf
0.3	08/01/2011	<ul style="list-style-type: none"><li>• Added three sentences to Introduction stating that this is a framework, not an end-to-end solution, and including information about Change Management's relationship to RM and SACM.</li><li>• Added one sentence to section 2.1 to clarify diversity of Change Management triggers.</li><li>• Added one brief sentence to section 2.2 to</li></ul>	NIHRFC Comments from Etienne Lamoreaux, Steve Peterson, and Dave Hunter.	Geoffrey Marsh

		<p>highlight the definition of a change.</p> <ul style="list-style-type: none"> <li>• Updated 2.3 to explain the term “RFC” on first non-titular use.</li> <li>• Updated 2.4 to explain the term “CR” on first non-titular use.</li> <li>• Added one sentence to section 2.10 to include information about schedule feedback to the CAB and to mention concept of an ECAB.</li> <li>• Added two words to section 2.11 to recommend that facilities staff also review the central repository.</li> <li>• Added acronym glossary.</li> </ul>		
1.0	08/16/2011	Recommended for approval by the ITMC EA Subcommittee	NIHRFC0001	N/A
1.0	8/30/2011	Approved by the ARB	NIHRFC0001	N/A

## 7 Author’s Address

Geoffrey Marsh  
National Institutes of Health  
10401 Fernwood Road  
Bethesda, Maryland 20817  
Phone: 301-594-9683

Email: geoff@mail.nih.gov

Peter Soltys  
National Institutes of Health  
6101 Executive Blvd. Suite. 360  
Bethesda, MD 20892-8405  
Phone: 301-496-0583  
Email: soltysp@mail.nih.gov

## 8 Acronym Glossary

<b>Acronym</b>	<b>Definition</b>
CAB	Change Advisory Board
CI	Configuration Item
CM	Change Management
CR	Change Request
ECAB	Emergency Change Advisory Board
EPLC	Enterprise Performance Lifecycle
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITSM	Information Technology Service Management
NIH	National Institutes of Health
NIHRFC	National Institutes of Health Request For Comments
RFC	Request For Change
RM	Release Management
SACM	Service Asset and Configuration Management