



# CDC UNIFIED PROCESS PRACTICES GUIDE



## OPERATION & MAINTENANCE MANUAL

### Purpose

The purpose of this document is to provide guidance on the practice of **Operation & Maintenance Manual** and to describe the practice overview, requirements, best practices, activities, and key terms related to these requirements. In addition, templates relevant to this practice are provided at the end of this guide.

### Practice Overview

Proper support of system activities is an integral part of maintaining consistent, ongoing operations. Information supporting operational activities can come from any number of sources, each with specific agendas but, consistent in their common support of operational continuity. The challenge for operations managers is to effectively unite and communicate this information in a form accommodating of the day-to-day operations environment. One approach that is commonly used is the creation and distribution of Operations and Maintenance (O&M) Manuals.

The Department of Health and Human Services (HHS) Enterprise Performance Life Cycle (EPLC) Framework defines an O&M Manual as a document for help desk support that clearly describes the business product that will be operating in the production environment and provides the operations and support staff with the information necessary to effectively handle routine production processing, ongoing maintenance, and identified problems, issues, and/or change requirements.

O&M Manual planning is one component of a much broader knowledge transfer process. Transferring knowledge is necessary to facilitate the transition of the project's product from the project stage into continuing operations. An O&M Manual contains information and strategies designed to guide operational stakeholders in the normal use and maintenance of the project's product. The manual should be designed in a manner that facilitates actions and responses to anything that may arise during normal product operations and maintenance. The actual type(s) of manual(s) created, the information they contain, and the defined stakeholder response(s) are derived from information inputs from areas such as:

- Project Team – O&M Manuals help transfer knowledge, lessons learned from the development and testing of the product, from the project team to the operations team
- Operations Support Environment – O&M Manuals document operational processes, tasks, and responsibilities associated with ongoing operations and maintenance in the production environment
- Operations Activities – O&M Manuals save time and expense by reducing the mishandling of standard operational activities through the use of concise, documented, step-by-step instructions
- Operations Training – O&M Manuals can be used as training tools; empowering stakeholders to make decisions regarding basic system operations and maintenance that otherwise might be mishandled

Every O&M Manual is uniquely tailored to meet the specific needs of its purpose. It's not uncommon, especially for large complex systems, that multiple manuals be created for separate departments, job functions, activities, etc. Some common types of O&M Manuals include:

- Product installation and maintenance manuals
- System description, operations, backup, and recovery manuals
- Data and software administration manuals
- Human resources and personnel manuals
- Help desk support manuals
- User Manuals
- Emergency and safety manual
- Quick reference guide
- Job aids
- Run book



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Regardless of what is documented an O&M Manual should be treated as a living document, remaining flexible to accommodate changes that will inevitably occur as the organization matures. O&M Manuals may include information on topics such as:

- Installation and configuration options and associated definitions
- System maintenance, updates, and upgrade policies, procedures, and schedules
- Proper and improper handling and maintenance of different types of equipment
- Database schema, network topology, and flowcharts used to illustrate items such as system designs, data communications, program logic, and the relationships between network nodes
- Instructions for opening/closing and starting/stopping applications, devices, and services under various conditions
- Procedures and sequences describing backup routines, media type, storage locations, and schedules
- Security controls for staff, facilities, infrastructure, and emergency response procedures
- Frequently asked questions and troubleshooting techniques for common issues
- Roles, responsibilities, and contact information for key personnel and support staff
- Other miscellaneous and/or relevant items

## Best Practices

The following best practices are recommended for **Operation & Maintenance Manual** development:

- **Easy** – Create O&M manuals so that they can be read and understood by even individuals not familiar with the topic being documented
- **Accessibility** – Stakeholders should be able to quickly retrieve the latest version of any O&M manual from an agreed upon location such as a shared website
- **Jargon** – Avoid technical jargon and ambiguous acronyms whenever possible
- **Regulations** – Identify related regulatory requirements
- **Manuals** – Create as many manuals as necessary to facilitate the continuity of operations
- **Style** – Adopt and ensure consistent style, text, sectioning, etc throughout the documents
- **Authors/Editors** – If possible, appoint a single author and a different editor
- **Align** – Align O&M Manuals with the policies and processes of the performing organization
- **Update** – O&M Manuals are living documents and should be updated as influencing variables change
- **Educate** – Train stakeholders and staff, and continually reinforce O&M practices, processes, policies, and standards
- **Lessons** - Review previously used O&M Manuals. Lessons learned from key personnel involved in their development may identify specific lessons learned relevant to current operational activities

## Practice Activities

- Identify the types of O&M Manuals required
- Identify information sources and the information to be included in each manual
- Identify and engage appropriate stakeholder and subject matter experts (SME)
- Identify and incorporate SME inputs
- Develop each O&M Manual
- Obtain appropriate stakeholder approval, and publish manuals
- Plan testing, training, and exercises to reinforce and validate O&M Manuals
- Prepare personnel through training and awareness campaigns
- Document lessons learned and incorporate them into updates to future O&M Manuals
- Maintain O&M Manuals as living document, update them regularly to remain current with operational and system changes

## Practice Attributes

This section provides a list of practice attributes to help project teams determine the extent to which **Operation & Maintenance Manual** impacts their project.



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<b>Practice Owner</b>	CDC Unified Process Project Office ( <a href="http://www.cdc.gov/cdcup/">http://www.cdc.gov/cdcup/</a> )
<b>Criteria</b>	HHS requires O&M Manual(s) prior to transitioning a project into the Operations and Maintenance phase of the EPLC.
<b>Estimated Level of Effort</b>	Moderate
<b>Prerequisites</b>	Product implementation
<b>Practice Dependencies</b>	NA
<b>Practice Timing in Project Life Cycle</b>	O&M Manual planning should begin well in advance of the project's product transitioning into the O&M phase. Manuals should be treated as living documents and updated as operational variables change. Education of stakeholders and staff related to such manuals should continue throughout the life of the project.
<b>Templates/Tools</b>	<ul style="list-style-type: none"><li>• CDC UP Operations &amp; Maintenance Planning Process Guide</li><li>• CDC UP Operations &amp; Maintenance Planning Template</li><li>• CDC UP Operations &amp; Maintenance Planning Checklist</li></ul>
<b>Additional Information</b>	NA

### Key Terms

Follow the link below to for definitions of project management terms and acronyms used in this document.  
<http://www2.cdc.gov/cdcup/library/other/help.htm>

### Related Templates/Tools

Below is a list of template(s) related to this practice. Follow the link below to download the document(s).  
<http://www2.cdc.gov/cdcup/library/matrix/default.htm>

- CDC UP Operations & Maintenance Planning Template
- CDC UP Operations & Maintenance Planning Checklist