



U.S. Department  
of Transportation  
**Maritime  
Administration**

## MANUAL OF ORDERS

### MARITIME ADMINISTRATIVE ORDER

REVOKES

NO.

220-11

EFFECTIVE DATE

February 15, 2005

SUBJECT

Maritime Administration Information Technology Management

Section 1. Purpose: This order establishes policies, processes and procedures to provide flexibility where possible, while ensuring the Maritime Administration's (MARAD's) Information Technology (IT) Program complies with all applicable federal laws and policies. It establishes an IT Capital Planning and Investment Control Process (CPIC) for prioritizing MARAD IT initiatives and it establishes the MARAD System Development Life Cycle (SDLC) process to ensure MARAD IT projects are executed and operated within cost, schedule, and performance baselines.

Section 2. Scope:

2.01 This order applies to:

- 1 All MARAD IT projects and IT resources including those operated by contractors, subcontractors and/or service providers on behalf of MARAD.
- 2 All MARAD offices, regions, U.S. Merchant Marine Academy (USMMA), employees, contractors, subcontractors, support personnel, and all others who develop, support, operate, and/or use MARAD IT facilities, IT services, and/or IT systems.

Section 3. References: This document implements the requirements specific to IT in the following references:

The Chief Financial Officers Act of 1990 (CFO), as amended  
 The Government Performance and Results Act of 1993 (GPRA), as amended  
 The Federal Acquisition Streamlining Act of 1994 (FASA), as amended  
 The Paperwork Reduction Act of 1995 (PRA), as amended  
 The Clinger-Cohen Act of 1996 (CCA), as amended  
 Government Paperwork Elimination Act of 1998 (GPEA), as amended  
 Government Information Security Act of 2000 (GISRA), amended.  
 Federal Information Security Management Act of 2002 (FISMA), as amended  
 E-Government Act of 2002 (P.L. 107-347), as amended  
 OMB Circular A-11  
 OMB Circular A-130  
 Section 508 of the Americans with Disabilities Act, as amended  
 US Department of Transportation, Office of the Chief Information Officer, Capital Planning and Investment Control Manual, Pre-Release Draft, January 2004  
 US Department of Transportation Information Resource Management Manual (DIRMM)  
 US Department of Transportation Information Technology Project Management Guidebook, November 2004  
 National Institute of Standards and Technology (NIST) Special Publication 800-64, Security Considerations in the Information System Development Life Cycle  
 Maritime Administration, Strategic Plan for Fiscal Years 2003-2008, September 2003

Section 4. Definitions: See appendix 1 to this order.

Section 5. Policy:

5.01 All new and existing MARAD IT projects, resources, and services are subject to and must comply with the MARAD Capital Planning and Investment Control (CPIC) and the System Development Life Cycle (SDLC) process depicted in appendix 2 to this order. The MARAD IT Administrative Manual (ITAM) will provide detailed guidance for IT requirements and deliverables during each SDLC phase.

5.02 Projects shall not be partitioned into smaller units to avoid meeting a higher level oversight authority.

5.03 Every IT project will have a cost, schedule and performance baseline approved by the appropriate oversight authority. A project breach will occur when the project exceeds its cost, schedule or performance baseline. The project manager will notify the MARAD Chief Information Officer (CIO) of all anticipated and actual project baseline breaches.

5.04 Changes to projects that achieved full operational capability (FOC) prior to this order will be subject to the oversight of the CIO, who may raise the level of oversight as deemed necessary.

Section 6. Capital Planning and Investment Control (CPIC) Process:

6.01 Select Phase: The process used to determine priorities and make decisions about which projects (new and ongoing) will be funded and included in the IT portfolio. The objective of the Select Phase is to align IT projects with strategic business objectives. During this phase, the MARAD IT customers will specify their needs and shall relate the needs statement to the MARAD mission. These needs will be provided to the assigned Business Solutions Manager (BSM) for analysis and planning. Minor and major modifications will be proposed as needed.

6.02 Control Phase: An ongoing management process designed to monitor the progress of initiatives against project cost, schedule, performance, risks, and expected mission benefits. The objective of the Control Phase is to decrease risks to a project and increase its likelihood for success. The IT Investment Review Board (IRB) shall meet at the appropriate Key Decision Points (KDPs) to evaluate and approve MARAD IT projects as they progress through the CPIC/SDLC phases. Throughout the life cycle of the IT project, the IT Business Manager, Chief Architect, and user will ensure that the solution meets the mission requirements.

6.03 Evaluate Phase: Once initiatives are fully implemented, actual versus expected results are evaluated to: (1) assess the project's impact on strategic performance; (2) identify any changes or modifications to the project that may be needed; and (3) revise the investment management processes based on lessons learned.

Section 7. System Development Life Cycle (SDLC): Once the user need has been identified and validated, an IT initiative enters the System Development Life Cycle (SDLC). The SDLC includes the following phases:

7.01 Initiation Phase: The Initiation Phase begins when management determines that it is necessary to enhance a business process through the application of information technology. IT projects may be initiated as a result of business process improvement activities, changes in business functions, advances in information technology, or may arise from external sources.

7.02 Planning Phase: In the Planning Phase, the system concept is defined from a user's perspective. A comprehensive business case and plan for developing the IT initiative is established. User needs are identified and developed to define a new or improved capability to satisfy a mission.

7.03 Requirements Definition Phase: This phase begins by setting operational requirements and exploring alternative solutions for meeting the identified need. Typically, competitive, parallel short-term concept studies by the Government and/or industry may be conducted during this phase. The Project Manager may also choose to review alternative solutions to make a recommendation to the IRB. Once the solution has been selected, the focus turns to demonstrating the feasibility of the preferred alternative and refining that solution prior to a production commitment.

7.04 Design Phase: This phase includes the detailed design and testing for the selected solution. In this phase, the requirements are identified and converted into detailed design specifications and test plans. Procedures for system supportability, systems disruption management, including backup, recovery, and post recovery are developed during this phase.

7.05 Development Phase: After the IT system design has been approved, the project moves into the development phase. The developer builds or implements the IT system according to the approved design. This team conducts unit, module, and integration testing.

7.06 Test Phase: Once the IT project is fully developed, it moves into the Test Phase. During this phase the system completes rigorous user acceptance testing. In some cases, independent testing will be completed. The system must be certified for operational use prior to proceeding to the next phase.

7.07 Implementation Phase: The objective of this phase is to deploy IT systems for operational use. Asset(s) are produced and deployed in lots or blocks, each of which is a programmatically and economically useful segment. This phase requires an update to documents prepared in the prior phases.

7.08 Operations/Maintenance Phase: This phase marks the steady state operations of the project and the use of the assets to perform the required mission. The IRB may conduct Post Implementation Reviews (PIRs) to ensure the operational assets continue to meet performance and cost goals.

7.09 Disposition Phase: This phase marks the end of the life cycle of the assets and the project. It may include the transition of the capabilities to a new project or the complete disposal of the assets if the organization decides that it will no longer perform the function.

#### Section 8. MARAD IT Management Roles and Responsibilities:

##### 8.01 MARAD CIO:

- 1 Develop and update, as required, the MARAD IT Administrative Manual (ITAM), including procedures for managing the CPIC and SDLC processes, as well as other IT standards, processes and procedures. The ITAM will be MARAD's single source for all IT processes and procedures.
- 2 Identify an IT Business Solutions Manager (BSM) for the Office of the Administrator, the Office of the Chief Counsel, each Associate Administrator, the Region Directors, and the Superintendent, USMMA.

- 3 Implement the processes and procedures necessary to ensure that all IT projects and resources provide the best value to the organization and are strategically aligned to support the MARAD mission.
- 4 Oversee all IT projects and resources throughout their lifecycle.
- 7 Conduct routine IT project management reviews and publish metrics for all IT projects.
- 8 Identify the most cost-effective operations and support methods.
- 9 Publish an annual schedule for the IT CPIC process to provide an approved IT investment portfolio for the annual budget cycle.

8.02 MARAD Investment Review Board (IRB):

1 Membership:

Deputy Maritime Administrator (Chair)  
Office of Chief Counsel  
Associate Administrator for Administration  
Associate Administrator for Policy and International Trade  
Associate Administrator for Financial Approvals and Cargo Preference  
Associate Administrator for National Security  
Associate Administrator for Shipbuilding  
Associate Administrator for Port, Intermodal, and Environmental Activities  
Region Directors (two members--one representative for the fleet regions and one representative for the non-fleet regions, each rotates annually)  
Superintendent, United States Merchant Marine Academy  
CIO (Executive Secretary)

2 Responsibilities:

- (1) Evaluate the IT Investment Council's recommendations
- (2) Approve the MARAD annual IT Portfolio
- (3) Approve project baselines
- (4) Monitor the effectiveness of approved MARAD IT projects
- (5) Assign a qualified IT Project Manager for each approved project

8.03 IT Investment Council:

1 Membership: The offices listed below shall provide one representative to the Council.

CIO (Chair)	MAR-340	Each Region Office
MAR-100	MAR-360	USMMA
MAR-220	MAR-380	
MAR-240	MAR-400	
MAR-300	MAR-500	
MAR-310	MAR-600	
MAR-320	MAR-700	
MAR-330	MAR-800	

2 Responsibilities:

- (1) Analyze and weigh all IT project business cases for strategic alignment, architecture compliance, management approach, risk management, and return on investment.
- (2) Prepare a recommendation for the MARAD IT IRB.
- (3) Recommend a baseline for the cost, schedule and performance of each proposed project.

8.04 IT Business Solutions Managers (BSM):

- 1 The IT BSM will be trained and qualified in accordance with federal law, DOT, and MARAD policy to manage IT solutions. They may be full or part time.
- 2 The IT BSM will work with the customer to detail the requirements, prepare a business case for the business need, and represent the customer in technical matters.
- 3 The IT BSM will integrate IT systems within and across business areas to provide automation of end-to-end processes across MARAD.
- 4 The IT BSM will ensure IT solutions are engineered to optimize use of and compliance with enterprise architecture, including infrastructure, data, development tools, etc.

8.05 The IT Project Manager will be responsible for managing the IT project within the project baseline. The IT Project Manager will meet the validation requirements specified in the Department of Transportation Information Technology Project Management Guidebook.



John E. Jamian  
Acting Maritime Administrator

## DEFINITIONS

## Appendix 1

**Application:** (short for software application program) A computer program designed to perform a specific function with an interface to users and/or other applications, including commercial software applications and uniquely developed applications.

**Baseline:** A set of parameters that identify system/project approved cost, schedule and performance. Systems/Projects will set an original baseline at Project Authorization. Changes to the original baseline will be documented and tracked as the system/project matures through the System Development Life Cycle (SDLC).

**Capital Planning and Investment Control (CPIC):** A structured process used in the selection, management and oversight of IT initiatives. The CPIC process has three phases:

- **Select Phase:** The process used to determine priorities and make decisions about which projects (new and ongoing) will be funded and included in the annual IT portfolio. The objective of the Select Phase is to align IT projects with strategic mission objectives.
- **Control Phase:** An ongoing management process designed to monitor the progress of IT initiatives against the approved baseline. The objective of the Control Phase is to decrease risks to a project and increase its likelihood for success.
- **Evaluate Phase:** Once initiatives are implemented, actual versus expected results are evaluated. The objective of the Evaluate Phase is to ensure the IT project continues to deliver the expected mission benefits.

**Chief Architect:** The person responsible for implementing the organization's Information Technology Enterprise Architecture (EA). The Chief Architect for MARAD is the Chief Information Officer (CIO).

**Data:** A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by human or by automatic means.

**Design Phase:** A system development life cycle phase. During this phase requirements are transformed into detailed design specifications from which the IT system can be developed.

**Development Phase :** A system development life cycle phase. This phase includes all activities required to build the approved IT system.

**Disposition Phase:** A system development life cycle phase. This phase provides a plan and actions to transfer and/or retire the information, software and hardware.

**Enterprise:** An organizational element that operates as a unit to accomplish a mission. Each MARAD organization (e.g., National Security, Administration, Counsel) is an enterprise that is part of the MARAD enterprise, which is a part of the DOT enterprise, and so on. The definition of enterprise must be qualified in a specific environment to be most meaningful, and to eliminate ambiguity.

**Enterprise Architecture (EA):** An integrated framework for evolving or maintaining IT to achieve the agency's strategic mission goals.

## Appendix 1

**Full Operational Capability (FOC):** The attainment of the complete planned capability for an IT initiative. The capability must be properly tested and operated by trained personnel with the necessary support (documentation, help desk, etc.).

**Implementation Phase:** A system development life cycle phase. This phase ensures the system is deployed as designed and tested. It includes technical installation, user training and system administrator training.

**Information Technology:** Any equipment, interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by an executive agency. The term includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

**Information Technology Resources:** The entities involved in managing information to accomplish agency missions, including the information itself and the related resources, such as personnel, equipment, funds, and information technology.

**Information Technology Services:** A discrete set of personnel, information technology, and support equipment with the primary function of providing services.

**Initiation Phase:** A system development life cycle phase. The objective of this phase is to fully document the need, identify alternative solutions, and develop a business case analysis to support the authorization of the initiative.

**Key Decision Point:** Key Decision Points (KDPs) are critical approval points at specified stages during the system development life cycle of a project.

**Operations/Maintenance Phase:** A system development life cycle phase. System performs its intended purpose, enhancements are planned and tested. Hardware/software is added or replaced as required to ensure the system operates efficiently.

**Oversight Authority:** An official who provides approval at distinct points during the project's life cycle and certifies the project is being managed within the cost, schedule and performance baseline.

**Planning Phase:** A system development life cycle phase. The objective of this phase is to prioritize IT initiatives and ensure adequate funding is identified for the IT initiatives that best align with the mission objectives.

**Portfolio:** A set of approved IT initiatives funded to meet the agency's strategic mission objectives.

**Program:** A set of projects or systems intended to meet a specific need.

**Project:** An IT initiative that is approved and becomes part of the IT portfolio. It is a planned undertaking with a specific planned outcome.

**Requirements Phase:** A system development life cycle phase. During this phase, the detailed requirements are documented to ensure the investment will meet the user need.

**System:** A group of interrelated IT projects that function together to achieve a mission objective.

**System Development Life Cycle (SDLC):** A sequence of phases that comprise the process for developing software applications, projects and systems. The sequence spans from the identification of a need through implementation, operation, and retirement.

**Test Phase:** A system development life cycle phase. The IT investment enters this phase when it is fully developed, has passed development testing, and is ready for user acceptance testing.

**User Acceptance Testing:** Testing of an IT system by the users to ensure the system will deliver the required functionality.



# MARAD IT PROCESS

MAO 220-11  
APPENDIX 2

