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## IT SYSTEM LIFE-CYCLE AND PROJECT MANAGEMENT

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### **I. PURPOSE**

The purpose of this directive is to establish Agency policy and guidance on the development of information technology applications, particularly for the use of project management methodology and system documentation requirements.

### **II. POLICY**

All AMS IT projects shall be managed by a qualified Project Manager and conform to all Federal, Agency, and Department policies regarding system documentation and performance reporting.

### **III. DEFINITIONS**

**A. Project:** In accordance with the American National Standard *Project Management Body of Knowledge Guide* (PMBOK, ANSI/PMI 99-001- 2004), a project is a temporary endeavor undertaken to create a unique product, service, or result through progressive elaboration.

The project life cycle of an investment differs from the system life cycle of an investment in that a project closes at the end of the development cycle but the system life cycle continues through

the operational phase until the system is retired. An investment to enhance a system already in operation is managed as a new project.

**B. Project Management:** The PMBOK defines project management as the application of knowledge, skills, tools and techniques to project activities to meet project requirements. The discipline of managing projects consists of establishing clear and achievable objectives, identifying requirements, defining the scope of work to be performed, and balancing competing demands for cost, time, scope and quality to create a product that meets the needs and concerns of various stakeholders.

**C. IT System Development Life Cycle (SDLC):** The system development life cycle is a set of distinct activities that are performed either in series, with overlaps, or iteratively to create an IT software application. The phases of the SDLC are as follows:

1. Requirements Analysis (may include business process reengineering)
2. System Design (adhering to AMS Directive 3130.3 -Development of Browser-Based Applications as necessary)
3. Working Prototype
4. Build and Test
5. Deployment
6. System and User Documentation
7. Training
8. Operations and Maintenance

**D. Earned Value Management (EVM):** According to the PMBOK, “Earned value management is a management methodology for integrating scope, schedule, and resources, and for objectively measuring project performance and progress. Performance is measured by determining the budgeted cost of work performed (i.e., earned value) and comparing it to the actual costs of work performed (i.e., actual cost). Progress is measured by comparing the earned value to the planned value.”

#### **IV. DOCUMENTATION REQUIREMENTS FOR IT SYSTEMS**

Capital planning, cyber-security, privacy, and records documentation requirements for all new and existing IT systems shall be determined by completing Form AMS-642, *Documentation Requirements for AMS IT Systems*. This form allows project managers and system owners to determine in advance what system-level documentation is required by Federal, Department, and Agency policy, and when that documentation is required to be in draft or final form. For new systems, completed forms should be sent to the AMS Chief Information Officer (CIO). The CIO will confirm for the Program what documentation is required and when it is due to the Agency. The Agency Configuration Control Board (CCB) provides official approval of system documentation and this approval constitutes Agency approval for the system to enter the next stage of the system development life cycle (e.g., to begin system development or become a production system).

## **V. AMS CONFIGURATION CHANGE CONTROL BOARD (CCB)**

The purpose of the Agricultural Marketing Service (AMS) Configuration Control Board (CCB) is to ensure that any changes to AMS IT systems and the General Support System (GSS), including the Wide Area Network (WAN) and infrastructure services, are documented, evaluated, and approved prior to their implementation. This Agency Board is required by Department policy and is chaired by AMS CIO. All changes that can affect the security, operation, cost, enterprise architecture, or functionality of the GSS are subject to this Board. Additionally, system documentation required for AMS IT systems under development at the Agency and Program level shall be reviewed and approved by the Board before a system enters the next stage of the system development life cycle.

## **VI. PERFORMANCE REPORTING REQUIREMENTS FOR IT SYSTEMS**

Performance reporting requirements for AMS IT systems are as follows:

### **A. While Designing, Building, and Testing:**

**1. Major Investments and Non-Major Investments Over \$250,000:** Report designated Earned Value Management metrics monthly (e.g., Schedule Variance, Schedule Performance Index, Cost Variance, and Cost Performance Index) in accordance with Appendix I of the Department's Capital Planning and Investment Control (CPIC) Guide.

**2. Non-Major Investments under \$250,000:** Report Earned Value Management metrics at least annually when updating Agency Technology Investment Plans (TIP), and otherwise when requested.

### **B. While in Production:**

**1. Major Investments:** Report the operational analysis of investment in accordance with Appendix D of the Department's Capital Planning and Investment Control (CPIC) Guide. According to this guide, operational analysis is the comparison of the performance of an IT asset or system to an established baseline. At a minimum, performance measures should include:

- a. How well the asset supports its customers and stakeholders; and
- b. How well the asset is managed by the agency. The results of this analysis are recommendations to Agency managers as to the asset's continued use, modification, or termination.

**2. Non-Major Investments:** Report at least annually the operational analysis of non-major applications in the Progress Report or Retire Investment sections of the TIP, and otherwise when requested.

## **VII. PROJECT MANAGEMENT OF IT PROJECTS**

### **A. Management of Major Investments and Projects with Significant Risks**

Major Investments and all other IT projects with significant risks shall be managed by a qualified project manager of the ITG Project Management and Policy Support Branch (PMPSB). Projects with significant risks are:

1. Projects with development costs at or above \$250,000;
2. Projects involving stakeholders in two or more AMS Programs or USDA agencies; or
3. Projects designated to be at-risk by the Administrator (e.g., a project that uses new technology or an advanced technical approach to solving a problem).

### **B. Management of Non-Major Investments and Other Projects**

Non-major IT projects without significant risks shall be managed by a project manager or other individual designated by the Deputy Administrator of the Program sponsoring the development of the application.

### **C. Use of a Project Management Plan**

For each project, project managers shall prepare a written project management plan at a level of detail commensurate with the investment's size and complexity. The project management plan is a formal written document that serves as a day-to-day tool for managing all aspects of the project. Generally, the project plan must be developed by the key stakeholders, the project team, and the project manager, and approved by senior management in order to be effective.

The plan comprises each of the project phases listed below. These phases are often iterative as you proceed through the project timeline.

**1. Project Initiation:** All projects must be initiated with the preparation of a Technology Investment Plan (TIP). For more information on a TIP, please see AMS Directive 3130.1 Capital Planning and Investment Control. For projects that are required to deliver the investment, the TIP becomes a key input document for the Project Management Plan.

**2. Project Planning:** Every project authorized under the TIP must be planned in order to be successful. Planning is a continuous and iterative requirement throughout the life of the project and consists of planning and monitoring performance metrics related to resources, schedule, communication, cost, quality, risk, and procurement management. Additionally, a process for integrated change control is established for managing requests to change the project's scope, cost, or schedule.

**3. Project Execution:** The process of project execution is the phase where the work is performed. If portions of the work have been outsourced; follow AMS Directive 3130.4 - Technical Approval of IT Investments for acquisition guidance.

**4. Monitoring and Controlling Performance:** All projects must be monitored and controlled. Monitoring and controlling project performance ensures that project products, services or results are delivered within established cost and time parameters, and that risks and quality are understood and managed. Earned value management shall be used to control and report project performance.

**5. Project Close-Out:** The following tasks are performed when closing a project:

- a. Verify acceptability of all services and products;
- b. Administratively close all procurement and financial contracts;
- c. Update records and files according to file disposition requirements;
- d. Dissolve project team;
- e. Document lessons learned; and
- f. Execute the project management plan exit strategy to transition the system and all project documentation to the system owners and the operations and maintenance staff.

#### **D. Project Management Roles and Responsibilities**

In order to effectively manage a project, it takes the commitment and skills of many resources. The primary roles and responsibilities are listed below.

**1. Project Sponsor:** The person in the organization responsible for the project is the project sponsor. It is the responsibility of the project sponsor to:

- a. Support the Project Manager in obtaining resources and tools needed to conduct the project;
- b. Require regular status briefings and design reviews, and pass pertinent information up the line;
- c. Advise the project manager of conditions likely to cause project risks; and
- d. Be an advocate for the project manager and the project team.

**2. Chief Information Officer:** It is the responsibility of the Chief Information Officer (CIO) to:

- a. Ensure that the AMS project management office adheres to standard operating procedures in accordance with USDA and the PMBOK guidelines; and
- b. Ensure that all investment/project data is accurately reported to various oversight stakeholder communities (e.g., USDA/OCIO, OMB, GAO, Congress, etc.).

**3. Project Managers:** It is the responsibility of the project manager to:

- a. Understand the project requirements and ensure they are thoroughly and unambiguously documented;

- b. Prepare a project management plan with achievable cost, schedule, and performance goals;
- c. Facilitate project review from all governance stakeholders;
- d. Identify and manage project risks;
- e. Ensure the project team is well- organized, adequately staffed, and working well together;
- f. Manage project cost, schedule, requirements, and design baselines so they are traceable;
- g. Report meaningful metrics for cost, schedule, quality, and risk;
- h. Conduct regular status and design reviews;
- i. Ensure the adequacy of project documentation and testing;
- j. Maintain meaningful communications among project stakeholders; and
- k. Manage the project to attain the project goals and achieve stakeholder satisfaction.

**4. Project Team:** A project team comprises all the members responsible for conducting the daily activities of project tasks and share in the responsibility of ensuring project success.

**5. Stakeholder:** A stakeholder is a person or organization whose interest may be positively or negatively affected by the execution or completion of a project. Stakeholders are responsible for providing feedback to the Project Manager on any implication to the quality, performance, schedule, or cost of the project.

**6. Contracting Officer:** In cases when projects are outsourced, a warranted Contracting Officer will manage and execute binding contractual agreements. All other members, including the Project Manager, shall NOT bind the Government to any work outside the scope of the contract.

**7. Contractor:** In cases when projects are outsourced, a contractor will be selected to perform the work.

If you have any questions concerning this directive, contact the Information Technology Group, Project Management and Policy Support Branch Chief.

/s/

Lloyd C. Day  
Administrator