

1310.09 Quality Assurance

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SUBJECT: Quality Assurance.

APPLICATION: Executive Branch Departments and Sub-units.

PURPOSE: To provide procedures and guidelines for use of quality assurance techniques which are required for the development of effective automated information systems.

CONTACT AGENCY: Department of Technology, Management and Budget (DTMB)
Bureau of Strategic Policy (BSP)

TELEPHONE: 517/373-7326

FAX: 517/335-2355

SUMMARY: This procedure establishes QA requirements for information processing system development projects. It describes QA techniques which focus on critical success factors in the project's life cycle phases of: project definition, design, development, installation and post-implementation review.

APPLICABLE FORMS: Project Assessment Worksheet (PAW).

PROCEDURES:

General Information:

QA is the exercise of disciplined techniques and the enforcement of standards requisite to the implementation of error-free automated information systems. The primary task of a QA staff is to ensure that project plans include provisions for the activities necessary to build quality into the system development process. QA is a management function which focuses on the process for producing automated systems, whereas system development focuses on the product.

Dept. of Technology, Management and Budget, Bureau of Strategic Policy describes a generic model of a system development life cycle methodology and the major activities and key products associated with each of the 5 major phases. In addition, each phase has critical success factors. The main purpose of the QA function is to monitor progress to ensure that each factor that is deemed critical for the success of the project has, indeed, been addressed adequately. Regular reports should be submitted to the project manager outlining all deficiencies, omissions or deviations from prescribed work plans.

Agency:

- Must establish QA techniques after an information processing system development project has been determined to be a "large scale automated information system" as described in Procedures 1310.06 and 1310.10. Will implement QA techniques in conjunction with an approved system development life cycle method (Procedure 1310.07) to develop and implement systems that:
 - Meet defined needs and specifications.
 - Are implemented on time.
 - Avoid cost overruns.

- Includes the following critical QA related factors:
 - Project Definition:
 - All critical information needs have been identified and directly support the agency program.
 - System alternatives have been identified and evaluated.
 - Project definition should be completed to meet associated deadlines in the State's budget process.
 - User, technical, and executive management are involved in and approve the products of the phase.
 - Design:
 - The members of the project team understand their responsibilities and time commitments.
 - The users and the project team understand and are in agreement as to how the users will use the system. This includes the inputs that will be required, the outputs that will be available, and the ways that system operation will be controlled.
 - The scope, objectives, and requirements of the system are clearly defined.
 - Project resource requirements are accurately estimated.
 - The skill levels and experience of the users have been considered.
 - Interfaces with other systems (current and future) have been identified and addressed.
 - All relevant issues have been resolved to user and executive management's satisfaction.
 - Agency standards have been followed in analysis and design of the system.
 - Design phase activities have been thoroughly documented.
 - User, technical, and executive management have approved products of the design phase.
 - Unit and system testing techniques and processes have been identified.
 - Development:
 - The users provide adequate input throughout the phase to ensure that the system meets needs and expectations.
 - The software developed is accurate, reliable, and maintainable.
 - Timely turnaround is arranged for work unit tests during programming.

- Each work unit of the software and the integrated software is fully tested.
- Management approval is obtained for any changes to program specifications.
- Project management approves the resolution of all open issues.
- Adequate contingency plans are established for any unforeseen occurrences during system testing.
- Installation:
 - Management supports the system, agrees to the conversion approach, and commits adequate user resources throughout the phase.
 - Sound procedures for using, operating, and maintaining the system are developed and thoroughly documented.
 - The installation plan's critical path (the sequence of work steps that must be done and the minimum elapsed time required to do them) is clearly defined.
 - The hardware, system software, and communications network are fully operational prior to conversion.
 - Project activities and progress are continually monitored.
 - Adequate contingency plans are established.
 - Users are ready to convert to the new system and data is prepared for the conversion.
- Post-Implementation Review:
 - The system meets or exceeds expectations.
 - Potential changes are identified.
 - Formal procedures for accepting, prioritizing, approving, and making changes are established and followed.
 - An up-to-date copy of all system documentation is available.

In many cases, the QA activity fails because it takes on the appearance of a quality control function. That is, it concentrates on finding errors rather than preventing errors. The element of "prevention" must be constantly highlighted rather than the element of "detection."

BSP:

Will review the PAW and the determination that a project is or is not a "large scale automated information system" as described in Procedures 1310.06 and 1310.10. An affirmative determination results in the agency being required to follow the above techniques.

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