



Ministry of Community
Development and Ministry of
Tourism, Culture and the Arts

Information Systems Branch

**Overview of QAA
Responsibilities for
Application Code
Quality Assurance**



**Ministry of Community Development and
Ministry of Tourism, Culture and the Arts**

Overview of Quality Assurance Analyst Responsibilities for Application Code Quality Assurance

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EXECUTIVE SUMMARY

Quality Assurance and the Quality Assurance Review of new application development is of critical importance as part of the Information Systems Branch's Software Development Life Cycle (SDLC)

The four main reasons for this are:

- Low quality work in one phase of a project predictably causes problems in later phases.
- If quality issues are not addressed at each stage of a project, a much less "usable" system may be implemented; that is, difficult to use, inefficient, unreliable and dissatisfied users.
- The later in the project a problem is found, the more it will cost to fix.
- System Maintenance demands are effected by the quality of the application.

Frequent involvement of the Quality Assurance analyst assigned to a project during all phases of the system development will help to ensure a quality system.

A software quality assurance involves the reviewing and auditing of the software products and activities to verify that they comply with the applicable procedures and standards and to assure the production and operation of high quality products according to stated requirements. The results of these reviews and audits provide the project manager and other appropriate managers with appropriate visibility into the processes used. The software quality assurance is initiated at the beginning of a project and is conducted throughout the software engineering lifecycle.

QUALITY ASSURANCE EXPECTATIONS

- All Systems Development contractors must thoroughly review and abide by the "Information Systems Branch Standards and Policies, and Corporate IM/IT standards and policies prior to beginning any development work as these documents will form the basis of the Quality Assurance Review. These documents also detail what deliverables are expected. A thorough understanding of these documents will greatly decrease the time required for Quality Assurance Review.
- The most common problems found in a Quality Assurance Review are insufficient descriptions, inadequately describing the current and proposed systems and modeling at the physical level when it should be at the logical level.
- It is not the intention of the Quality Assurance analyst to comment on an individual's style but rather to ensure that standards are adhered to.
- The Quality Assurance analyst is concerned with software reliability as well as maintainability, portability and readability.
- The Quality Assurance analyst must be involved during the Analysis Phase of the project beginning with the JAD Session(s) if applicable. This type of involvement will save much time in the Quality Assurance Review. At intervals where a system review is done with the users, the Quality Assurance analyst must be invited. All documentation that is sent for review to a user must be sent to the Quality Assurance analyst as well.
- Where the system can be broken into subsystems or components (possibly noted as separate ERD Diagrams) or at the end of a project phase, the deliverables should be sent to the Quality Assurance analyst as available.
- Quality Assurance Review time must be part of the original system development Project Plan and the Quality Assurance analyst must agree to the timeframe allotted for the Quality Assurance Review.

- The Quality Assurance analyst will provide feedback/review comments to the system development team within one week depending on the size of the deliverables provided for review.
- The Quality Assurance analyst will be available to answer contractor questions regarding ISB Standards.
- The System Development Project Plan must take into consideration an iterative approach for Quality Assurance Review. I.e. Quality Assurance Review is not complete until the Quality Assurance analyst has no further comments.
- On a continual basis, the Quality Assurance Analyst will take samples of Application Code and compare it to the attached Audit Checklist (see Appendix B).

Deliverables Provided by the QA Analyst

QA Product Audit

The QA Analyst will coordinate product audits to be performed with the producer or owner to ensure the product is available and the appropriate support is available. The QA Analyst defines the audit criteria for the product being audited to include checks for product completeness, compliance, consistency, and traceability.

- **Completeness** – Product is complete and includes the appropriate level of detail
- **Compliance** – Product meets applicable standards and requirements
- **Consistency** – Product is internally and externally consistent
- **Traceability** – Product fulfills its allocated requirements.

The QA Analyst will complete the product audit checklist using the **Application Code Audit Checklist Form** (Appendix A). The QA Analyst will evaluate the product to the criteria defined in the checklist to determine product acceptability: **Yes** (Product meets the defined criteria), **No** (Product is noncompliant to the defined criteria), **N/A** (The specific audit criteria does not apply to this product) and add notes and comments, as appropriate.

The QA Analyst will provide audit results to the Business Analyst in charge of the project. Data recorded include item audited, audit date, audit status (accepted/unaccepted), number of non-conformances opened, number of non-conformances closed. Non-conformance data recorded include non-conformance identifier, non-conformance description, affected product, date initiated, date closed, non-conformance status (open, withdrawn, closed), and product criteria affected (completeness, compliance, consistency, traceability).

Appendix A: Application Code QA Audit Checklist

QA Audit Checklist for Application Code				
Product:				
Audit Criteria	Yes	No	NA	Notes
Source file organization				<i>Log the results of the tests, the need for additional work, the results of retests, the final resolution, etc.</i>
Header block				
External reference statements (ex. Imports and includes)				
Class definition				
Methods, initialization blocks, variables & constants				
Programming techniques				
Variable scope				
Access levels for variables and methods				
Internal Documentation				
Methods and instance variables				
Code within methods				
Custom Tags and Custom Types				
Error handling				
Exception handling				
Identification				
Response				
Reporting				
Interactive error handling				
Identification				
Response				

Reporting				
Logging				
Application design				
Architecture				
Web Services				
Common Components				
Naming conventions				
URLS				
Page Names				
Variables				
Classes and Modules				
Namespaces				
Module design considerations				
ASPX				
ASCX				
Database interaction				
User sessions and other contexts				
Maintenance				
Persistence				
Reports				
Public Internet				
Private Intranet				
Ad-hoc Reporting				
Security				
Authentication of the client				
Authentication between client and web listener				



Authorization for actions in the application				
Documentation				
Application use				
Application configuration				
Instructions for compilation				
Description of configuration				
Support Documentation				
Recommendations				
User interface				
Meet Corporate Standards				
Ease of use				
Accessibility				
Nonconformances: <Identify nonconformances found>				
QAA:			Date:	