



Ngwerema Close No 5, Olympia Park  
Lusaka, Zambia  
WEB: [www.corelink.co.zm](http://www.corelink.co.zm)  
MAIL: [info@corelink.co.zm](mailto:info@corelink.co.zm)  
CEL: +260963493849 / +260972615221

# Quality Assurance Manual: Software Development Lifecycle

**Submitted by:**

*Corelink Consulting Ltd.*

*PACRA Registration Number: 120220026085*

Ngwerema Road No. 5, Olympia Park  
Lusaka, Zambia

**Document Version:** 1.0

**Prepared For:** Client Software Development Projects

**Date:** April 8, 2025

## Table of Contents

1	Introduction.....	3
2	Agile QA Methodology .....	4
3	Testing Strategy and Types .....	6
4	Tools and Systems .....	7
5	Documentation and Reporting.....	8
6	Continuous Improvement .....	8

# 1 Introduction

## 1.1 Purpose

This manual outlines the Quality Assurance (QA) policies, procedures, and systems that Corelink Consulting will employ during software development projects. The purpose of this document is to ensure that all software developed by Corelink is of the highest quality, meets or exceeds client expectations, and is delivered in a predictable and efficient manner. Our QA framework is deeply integrated into our Agile development methodology to foster continuous improvement and collaboration.

## 1.2 Scope

This manual applies to all software development projects undertaken by Corelink Consulting. It covers all phases of the development lifecycle, from initial requirements gathering to final deployment and post-launch support. All employees, contractors, and stakeholders involved in the development process are expected to adhere to the principles and practices described herein.

## 1.3 Our Commitment to Quality

At Corelink Consulting, quality is not an afterthought; it is a core principle that drives our development process. We are committed to:

- **Client Satisfaction:** Delivering software that provides tangible value and a seamless user experience.
- **Defect Prevention:** Proactively identifying and addressing potential issues before they become major problems.
- **Continuous Improvement:** Regularly refining our processes, tools, and skills to enhance efficiency and effectiveness.
- **Transparency:** Maintaining clear and open communication with our clients about quality metrics and progress.

## 2 Agile QA Methodology

Corelink Consulting utilizes the Scrum framework for agile development. Quality assurance is not a separate phase but an integral part of each sprint, ensuring that quality is built into the product from the very beginning.

### 2.1 Roles and Responsibilities

- **Product Owner:** Responsible for defining user stories, acceptance criteria, and prioritizing the product backlog. They work closely with the QA team to ensure features meet business requirements.
- **Scrum Master:** Facilitates the agile process and removes impediments. They ensure the team has the resources and environment needed to adhere to quality standards.
- **Development Team:** Consists of developers and QA engineers who work collaboratively. Developers are responsible for writing quality code, including unit and integration tests.
- **QA Engineers:** Embedded within the development team, QA engineers are responsible for test planning, test case creation, executing tests, and championing quality throughout the sprint.

### 2.2 The Definition of Done (DoD)

The Definition of Done is a critical component of our quality framework. A user story is only considered "done" when it meets the following criteria:

- Code is complete and peer-reviewed.
- Unit and integration tests are written and passing.
- Functionality has been tested by a QA engineer against all acceptance criteria.
- No critical or major defects are outstanding.
- Regression tests have been performed and are passing.
- The feature is successfully deployed to a staging environment.
- Product Owner has reviewed and accepted the feature.

## 3 3. The QA Process within Sprints

Our QA process is seamlessly integrated into the two-week sprint cycle.

### 3.1 Sprint Planning

During sprint planning, the QA engineer will:

- **Analyze User Stories:** Review user stories selected for the sprint to ensure requirements are clear, testable, and have well-defined acceptance criteria.
- **Create Test Plans:** Outline the testing strategy for each story, identifying the types of testing required (e.g., functional, UI/UX, performance).
- **Estimate Effort:** Provide an estimate for the testing effort required for each story, which is factored into the overall sprint commitment.

### 3.2 During the Sprint (Development Phase)

- **Test Case Development:** QA engineers write detailed test cases for each user story in our test management system.
- **Continuous Testing:** As developers complete work on a feature, it is deployed to a testing environment. QA begins testing immediately, providing rapid feedback.
- **Bug Tracking:** All defects found are logged in our project management system (Jira) with clear titles, steps to reproduce, expected vs. actual results, and severity levels (Critical, Major, Minor, Trivial).
- **Regression Testing:** As new features are added and bugs are fixed, QA engineers conduct regression testing to ensure existing functionality has not been negatively impacted. This is a mix of manual and automated testing.

### 3.3 Sprint Review

The Sprint Review is a demonstration of the work completed during the sprint. The QA engineer's role includes:

- Confirming that all demonstrated features meet the Definition of Done.
- Assisting in the product demonstration to the client and stakeholders.
- Providing feedback and answering questions regarding the quality and functionality of the delivered increment.

### 3.4 Sprint Retrospective

In the retrospective, the entire team, including QA, discusses what went well and what could be improved. This is a key opportunity to refine our QA process by asking:

- Did we catch defects early enough?
- Are our tests providing enough coverage?

- Can we improve our test automation strategy?
- Were there any bottlenecks in the testing process?

## 4 Testing Strategy and Types

We employ a multi-layered testing strategy to ensure comprehensive coverage.

- **Unit Testing:** Developers write tests to verify individual functions or components of the code.
- **Integration Testing:** We test the interactions between different modules or services to ensure they work together as expected.
- **Functional & UI Testing:** QA engineers test the application against the business requirements and acceptance criteria to ensure it behaves as intended. We also verify the user interface for consistency and usability.
- **Regression Testing:** A suite of automated and manual tests that are run regularly to ensure new code changes do not break existing features.
- **Cross-Browser & Cross-Device Testing:** We ensure the application works consistently across a defined list of supported web browsers (e.g., Chrome, Firefox, Safari) and devices (desktop, tablet, mobile).
- **Performance Testing (as required):** For applications where performance is critical, we conduct load and stress testing to ensure the system is responsive and stable under pressure.
- **Security Testing (as required):** Basic security vulnerability scans and penetration testing are performed to identify and mitigate potential security risks.

## 5 Tools and Systems

Corelink Consulting leverages a modern toolchain to support our QA processes:

Category	Tool(s)	Purpose
<b>Project Management</b>	Corelink ERP ( <a href="https://www.corelink.co.zm/erp">https://www.corelink.co.zm/erp</a> )	Backlog management, sprint planning, and bug tracking.
<b>Test Management</b>	Corelink ERP ( <a href="https://www.corelink.co.zm/erp">https://www.corelink.co.zm/erp</a> )	Test case creation, execution tracking, and reporting.
<b>Automation Frameworks</b>	Selenium, Cypress	For automating web application regression and functional tests.
<b>Version Control</b>	Git (GitHub)	Managing source code and test automation scripts.
<b>CI/CD</b>	GitHub Actions	Automating the build, test, and deployment process.
<b>Collaboration</b>	Microsoft Teams / Whatsapp	Real-time communication for the development team.
<b>Support Ticketing</b>	Corelink ERP ( <a href="https://www.corelink.co.zm/erp">https://www.corelink.co.zm/erp</a> )	Incident Monitoring and response

## 6 Documentation and Reporting

Clear and concise documentation is essential for transparency and process improvement.

- **Test Plan:** A high-level document outlining the scope, approach, resources, and schedule of intended testing activities.
- **Test Cases:** Detailed step-by-step instructions for verifying a specific feature or functionality.
- **Bug Reports:** Standardized reports for logging defects, ensuring developers have all the information they need to resolve the issue.
- **QA Sprint Summary Report:** At the end of each sprint, a report is generated summarizing the testing activities, including tests executed, defects found (with severity), and the overall quality assessment of the sprint increment. This report is shared with the client.

## 7 Continuous Improvement

Corelink is dedicated to the continuous improvement of our QA processes. We track key metrics to measure our effectiveness and identify areas for growth, including:

- **Defect Density:** Number of defects per feature or story point.
- **Defect Removal Efficiency (DRE):** The percentage of defects found before a release.
- **Automated Test Coverage:** The percentage of code covered by automated tests.
- **Time to Resolution:** The average time it takes to fix a bug after it's been reported.

These metrics are reviewed during sprint retrospectives to drive process improvements.

**Signed by:**

A handwritten signature in blue ink, appearing to be 'S Chishimba', written in a cursive style.

**Susan Chishimba**

Director, Corelink Consulting Ltd.

Date: 9<sup>th</sup> April 2025

A handwritten signature in black ink, appearing to be 'Rowan J. Vos', written in a cursive style.

**Rowan J. Vos**

Director, Corelink Consulting Ltd.

Date: 9<sup>th</sup> April 2025