

ICS 65.020.99
CCS B 60

LY

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

LY/T 3127-2019

**Specifications for forestry application system quality control
and test**

林业应用系统质量控制与测试
(English Translation)

Issued on: October 23, 2019

Implemented on: April 1, 2020

Issued by: State Forestry and Grassland Administration

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Quality control of forestry application systems	1
4.1 Overview	1
4.2 Quality Assurance Plan Development	1
4.3 Quality Assurance Plan Implementation	2
4.4 Quality Evaluation	2
4.5 Quality Problem Management	2
5 Forestry Application System Quality Testing	2
5.1 Overview	2
5.2 Test purpose	2
5.3 Test categories	3
5.4 Test contents	3
5.5 Test activities	4
5.6 Test method	4
5.7 Test cases	5
5.8 Test Management	6
5.9 Test review	6
Appendix A (informative) Common templates for test documents	8
Appendix B (Normative Appendix) Unit Test Instructions	10
Appendix C (Normative Appendix) System Test Instructions	14
Appendix D (Normative Appendix) Regression Test Instructions	21
References	25

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Information Center of the State Forestry and Grassland Administration.

This standard is under the jurisdiction of the National Forestry Information and Data Standardization Technical Committee (SAC/TC 386).

Responsible for drafting this standard. Beijing Forestry University, National Forestry and Grassland Information Center, National Engineering Research Institute of Software Engineering, Peking University Research Center.

1 Scope

This standard specifies requirements for quality control and quality testing during the development and maintenance of forestry application systems.

This standard applies to the development and maintenance of forestry application systems. It also applies to the internal control management, self-test, and third-party testing of system developers.

Institutional evaluation.

Note: The forestry application system is only the forestry application software.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 8566 Information technology software life cycle process GB/T 12504 Computer Software Quality Assurance Plan Specification LY/T 2265 Forestry information terminology LY/T 2925 Forestry Information System Quality Specification

3 Terms and definitions

The terms and definitions defined in GB/T 8566-2007, GB/T 12504-1990 and LY/T 2265-2014 apply to this document.

Forestry application system Software or procedures to solve application problems in forestry informatization.

4.1 Overview

The content of quality control in forestry application systems includes quality assurance plan formulation, quality assurance plan implementation, quality evaluation, and quality issues management.

4.2 Quality Assurance Plan Development

Quality assurance plan development refers to the project developer's determination of process activities, Contents, methods and time of work product inspection.

When developing different forestry application systems, their quality assurance plans should reflect different priorities based on actual business needs.

The quality assurance plan should include.

- a) Management, describing the organization, tasks and related responsibilities responsible for quality assurance of forestry application systems;
- b) Documents, lists the documents that need to be prepared in the stages of forestry application system development, verification, validation, use and maintenance, and describes Describe the criteria for review and inspection;
- c) Review and inspection, describe the technical and management review and inspection work to achieve quality assurance, list the different projects Phase of quality control activities, and prepare or reference relevant review and inspection procedures, technical judgment criteria;
- d) Configuration management, describing the content of configuration management of forestry application systems;
- e) tools, techniques and methods, indicating the tools, techniques and methods used to support the quality assurance of forestry application system projects, description and explain its purpose and use;
- f) control, describing the control content related to the forestry application system;
- g) Record collection, maintenance, and retention, indicating the records of quality assurance activities that need to be maintained, and provisions for summary, protection and maintenance of records Recording methods and facilities, and shelf life.

4.3 Quality Assurance Plan Implementation

Quality assurance plan execution refers to the organization of quality by the quality assurance personnel according to the content of the quality assurance plan, according to time nodes or project milestones Quality assurance activities specified in the assurance plan.

4.4 Quality Evaluation

Quality evaluation refers to the evaluation of the function and performance of the system according to the work products such as relevant documents and programs developed by the system.

The focus of quality evaluation of forestry application systems should include.

- a) functional characteristics;
- b) reliable characteristics;

- c) easy-to-use features;
- d) Efficiency characteristics.

The specific capabilities of forestry application systems should be comprehensively evaluated through tests and other methods, and the evaluation process and results should be correct, Objective, concise and complete.

4.5 Quality Problem Management

Quality problem management refers to the systematic management of system problems found during the review or testing process. Its requirements include.

- a) Find problems, find and record system problems during the review or test process, and describe the problems comprehensively and specifically;
- b) Analyze the reasons, analyze the causes of the recorded problems, and consider the objective factors such as procedures and equipment and personnel in the analysis process Observation factors, and form a detailed description of the problem;
- c) Formulate corrective measures, systematically formulate reasonable and effective solutions according to the cause of the problem, and identify the responsible person Staff and time nodes;
- d) Zero the problem and implement the corrective measures that have been formulated to avoid recurrence of the problem. If the corrective measures fail to achieve the expected results, they should Perform steps b) -c) again.

5.1 Overview

The forestry application system quality test process should be guided by a complete test plan, and should be based on the test purpose, test category, test content, the test process, test methods, test cases and test management form a complete closed loop to ensure the efficiency of test work.

5.2 Test purpose

The purpose of each test of the forestry application system should be specified. The test purposes include.

- a) identify errors in the development of forestry application systems and ensure that they are fixed;
- b) verify that the system meets the quality requirements specified in the project development contract, requirements description, and system design documents;
- c) Provide a basis for evaluating the quality of the system.