

# HJ

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

### HJ 728-2014

---

#### Specification for Test and Acceptance of Environmental Information Systems. The software part

环境信息系统测试与验收规范—软件部分

(English Translation)

Issued on: December 25, 2014

Implemented on: March 1, 2015

---

Issued by: Ministry of Ecology and Environment

## Table of Contents

Preface

1 Scope of application

2 Terms and definitions

3 Test part

### Foreword

To carry out the "Environmental Protection Law of the People's Republic of China" to promote environmental information work, standardize the environmental information system Test and acceptance process to ensure the quality and performance of environmental information systems, the development of this standard.

This standard specifies the planning, implementation, monitoring and evaluation of the environmental information system (software part) testing and acceptance.

And prevention management processes, to guide the developers, users and third parties to the new development of software, secondary development software and business with software testing and acceptance work.

Appendix A to this standard is an informative appendix.

This standard is the first release.

This standard is organized by the Ministry of Environmental Protection Science and Technology Standards Division.

The main drafting of this standard. the Ministry of Environmental Protection Information Center, Jiangsu Province Environmental Information Center.

The Environmental Protection Department of this standard approved on December 25, 2014.

This standard is implemented on March 1, 2015.

This standard is explained by the Ministry of Environmental Protection.

Environmental Information System Testing and Acceptance Specification - Software Part

### 1 Scope of application

This standard specifies the planning, implementation, monitoring and evaluation of the environmental information system (software part) testing and acceptance.

And prevention and other processes, used to guide the developers, users and third parties on the newly developed software, secondary development software and commercial soft Testing and acceptance of the work.

This standard applies to all levels of the national environmental protection departments to develop various types of new development software, secondary development software and commercial soft Pieces.

## **2 Terms and definitions**

The following terms and definitions apply to this standard.

### **2.1 Environmental Information System**

The core management software that integrates, processes or displays environmental data; implements environmental protection.

The decision-making system, management control system, office automation system and data and business exchange interface.

### **2.2 Test**

A collection of one or more test cases; or a collection of one or more test procedures;

One or more test cases or protocols.

Acceptance

According to a certain standard for the project to develop the software, according to the contract, the Software Requirements Manual (SRS) and so on Finished product inspection, to confirm whether the quality of the project to meet the requirements of the user.

### **2.4 Test Organization Testing Organization**

The user of the environmental information system or the third party testing organization commissioned by the user.

### **2.5 Test Case Test Case**

For specific goals (for example, to practice a specific program path or to verify compliance with a specific requirement) A set of test inputs, execution conditions and expected results. For test items, specify the input, expected results and A set of documents that execute conditions.

Acceptance Organization the user or the user commissioned by the third party acceptance organization (including the user side commissioned by the expert group and other forms).

Project Plan

Project integrated management plan.

## **2.8 User Documentation User Documentation**

A complete collection of documents in print or non-printed form is a product that customizes the development of software and solutions.

Prepared part.

## **23 Test section**

### **3.1 General requirements 3.1.1 coverage**

3.1.1.1 National environmental information system the national environmental information system is the environmental information system approved by the national environmental protection department. The measurement of such a system Test organization for the Ministry of Environmental Protection or the Ministry of Environmental Protection approved third-party software evaluation agencies.

3.1.1.2 Provincial environmental information system Provincial environmental information system is the provincial environmental protection departments approved the construction of environmental information system. The testing of such systems Organization for the provincial environmental protection administrative departments or provincial environmental protection administrative departments recognized third-party software evaluation machine Structure

3.1.1.3 Urban and municipal environmental information systems the municipal environmental information system is an environmental information system approved by the municipal environmental protection departments. Such a system of the test organization for the local and municipal environmental protection administrative departments or local and municipal environmental protection administrative departments approved the third Side software evaluation agencies.

3.1.1.4 District and county level environmental information system District and county environmental information system is the district and county environmental protection departments approved the construction of environmental information system. This type of system the competent testing organization shall be the district/county administrative department of environmental protection at the county level or the administrative department of environmental protection at the district or county level.

Tripartite software evaluation agencies.

### **3.1.2 System scale**

According to the system corresponding to the information security level protection level will be divided into I-V system scale, respectively, corresponding information Security and other

security system in the first to fifth level, as shown in Table 1.

Table 1 System scale division

System scale objects corresponding to other levels I first level General system second level III Level III Important system Fourth level V Extremely important system fifth level 3.1.3 system type A) the new system. refers to the implementation of the contract does not exist before the need for construction units to develop the system;

3b) Secondary development system. Such systems include three types, namely, partially developed systems, provided by the purchaser, and heavy with the system. Partially developed systems usually refer to existing or partial presence prior to the execution of the contract, but are required before delivery the system provided by the ordering party, usually refers to the source code can be obtained, but the need for construction unit evaluation, Developed or modified part of the code can be put into use the system; reusable system, usually refers to the construction unit has the source code, can Developed or modified documents, through the call code can achieve the relevant functions of the system;

C) commercial systems. the product system, such systems are generally only the target code and user manual, access to the system source code it is difficult, the user or the construction unit can not freely modify the system.

#### 3.1.4 test level

A) Unit testing. refers to the system development process to be carried out at the lowest level of testing activities. In unit testing activities, the independent units of the system will be tested in isolation from the rest of the program;

B) integration test. refers to the unit test on the basis of all modules in accordance with the design requirements assembled into a subsystem or System, for integrated test activities;

C) system test. refers to the already confirmed system, computer hardware, peripherals, networks and other elements together, into Line assembly test and validation test activities. The purpose is to verify that the system meets the definition of the requirements specification and finds out what is unqualified at D) regression test. refers to the modified code, the re-testing activities. The purpose is to confirm that the changes did not introduce new ones the error or cause other code to generate an error.

3.1.5 system size, test level and the corresponding relationship between the type of system the correspondence between system scale, test level and system type is shown in Table 2.

Table 2 System scale, test level and system type correspondence table

#### Test level system

Scale new system secondary development system commercial system Integration testing, system testing (master to function), regression test Integration testing, system testing (main work) can), regression test System testing (main work) can), regression test Unit testing,