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Reliability of system and software -- Part 2: Metric method

系统与软件可靠性 第2部分：度量方法

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Foreword

GB/T 29832 "System and Software Reliability" is divided into three parts as follows.

- Part 1. Index System;
- Part 2. Measurement Methods;
- Part 3. Test methods.

This is Part 2 GB/T 29832 of.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This part of the National Information Technology Standardization Technical Committee (SAC/TC28) and focal points.

This section is drafted. Shanghai computer software technology development center, Zhuhai Southern Software Testing Center, China Electronics Standards Institute of

Shenzhen Technology Co. Angola measurement standards, Beijing University of Posts and Telecommunications, Shanghai Pudong Software platform Ltd., Shanghai Baosight Co., Ltd., Shanghai Lu Qixin Information Technology Co., Ltd., Henan Electric Power Research Institute.

Introduction

This section GB/T 29832 with reference to GB/T 16260.2-2006 "Software engineering - Product quality - Part 2. External metrics" with Body given the system reliability and the quality of software metrics and measurement formulas.

The method set forth in this section is not a complete set, is still exploring new methods not included. Reliability testing personnel from in this section select the appropriate method for single or multiple combinations of methods for measuring the reliability of the system under test quality situation; to be Modify or use other methods not covered in this section.

This section applies to a variety of computer software products and related systems with reliability requirements, but not every measure for a variety of meter Computer software products and related systems, and in this section assumes that the tested software and related systems have been running for some time, it has been subjected to function Test.

The main users of this standard is expected to include.

- a) the demand side (obtained from the supplier or procurement system, software product or software service individual or organization);
- b) the evaluator (individual or organization to implement the evaluation);
- c) the supplier (the contract provided by the system, organization or individual software product or software service to the acquirer), which is indeed the eligibility test when using recognized software quality.

GB/T 29832.1 "Systems and Software Reliability - Part 1. Indicator System" gives the system reliability index, GB/T 29832.3 "Systems and Software Reliability - Part 3. Test methods" describes the test method for reliability index. This section aims in conjunction with the GB/T 29832.1 and GB/T 29832.3.

Systems and Software Reliability Part 2. Measurement Methods

1 Scope

This part of the basis of the index system GB/T 29832 in GB/T 29832.1 presented on the provisions of the reliability of the system and software the amount of formula for demand-side system and software evaluator for the parties to provide a uniform measure of reliability.

This section applies to systems and software reliability requirements of reliability test and

measurement.

NOTE: The system referred to in this section are primarily software system.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 11457 software engineering terminology Part of GB/T 29832.1 Systems and Software Reliability 1. Indicator System

3 Terms and Definitions

Terms and definitions GB/T 11457 and GB/T 29832.1, as defined in this document apply.

4 Overview

Software reliability testing is current practice to test a difficulty, involving more reliability theories and models. These theories and models Still under development, with a strong pre-conditions and targeted with high exploratory. This section for the sub-measure characteristics can actually feed Line description does not address specific reliability theories and models.

5 Maturity

5.1

Failure of

Failure of the software used to measure the extent of the occurrence and resolve failures, including failure density, failure resolution rates and other indicators, as shown in Table 1.

Failure of Table 1

Index Name Index Description Measure, formula and data element computations
measurements Description Failure intensity Within a certain period of the test subject the number of failures detected $X = A/B$ where.

A --- number of failures detected;

B --- Number of test case execution $0 \leq X$, depending on the test order Segment at a later stage in the X Smaller is better. With the measure Try to promote the process, the value should be Getting smaller and smaller