

IEEE STANDARD 829-1998
SOFTWARE TEST
DOCUMENTATION

200511316

김형석

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Test plan

▣ Purpose

- The purpose of the test plan is to prescribe the scope, approach, resources, and schedule of the testing activities.

To identify the items being tested, the features to be tested, the testing tasks to be performed, the personnel responsible for each task, and the risks associated with this plan.

Test plan

- ▣ Test plan identifier
 - Specify the unique identifier assigned to this test plan.

- ▣ Introduction
 - Summarize the software items and software features to be tested.

Test plan

- ▣ Introduction
 - References to the following documents are required in the highest level test plan:
 - a) Project authorization
 - b) Project plan
 - c) Quality assurance plan
 - d) Configuration management plan
 - e) Relevant policies
 - f) Relevant standards

Test plan

- ▣ Test items

- Specify characteristics of their transmittal media that impact hardware requirements of indicate the need for logical or physical transformations before testing can begin.

ex) programs must be transferred from tape to disk.

Test plan

- ▣ Test items
 - Supply references to the following test item documentation, if it exists:
 - a) Requirements specification
 - b) Design specification
 - c) Users guide
 - d) Operations guide
 - e) Installation guide

Test plan

- ▣ Features to be tested
 - Identify all software features and combinations of software features to be tested.

- ▣ Features not to be tested
 - Identify all features and significant combinations of features that will not be tested and the reasons.

Test plan

- ▣ Approach
 - Describe the overall approach to testing.
 - Specify any additional completion criteria.
ex) error frequency
- ▣ Item pass/fail criteria
 - Specify the criteria to be used to determine whether each test item has passed or failed testing.
- ▣ Suspension criteria & resumption requirements
 - Specify the criteria used to suspend all or a portion of the testing activity on the test items associated with this plan.

Test plan

- ▣ Test deliverables
 - Identify the deliverable documents.
 - The following documents should be included.
 - a) Test plan
 - b) Test design specifications
 - c) Test case specifications
 - d) Test procedure specifications
 - e) Test item transmittal reports
 - f) Test logs
 - g) Test incident reports
 - h) Test summary reports

Test plan

- ▣ Testing tasks
 - Identify the set of tasks necessary to prepare for and perform testing.
- ▣ Environmental needs
 - Specify both the necessary and desired properties of the test environment.

Test plan

- ▣ Environmental needs
 - Identify special test tools needed.
 - Identify any other testing needs (e.g., publications or office space).

Test plan

- ▣ Responsibilities
 - Identify the groups responsible for managing, designing, preparing, executing, witnessing, checking, and resolving.
- ▣ Staffing and training needs
 - Specify test staffing needs by skill level. Identify training options for providing necessary skills.

Test plan

- ▣ Schedule
 - Define any additional test milestones needed. Estimate the time required to do each testing task.
- ▣ Risks and contingencies
 - Identify the high-risk assumptions of the test plan. Specify contingency plans for each (e.g., delayed delivery of test items might require increased night shift scheduling to meet the delivery date).
- ▣ Approvals
 - Specify the names and titles of all persons who must approve this plan. Provide space for the signatures and dates.

Test design specification

- ▣ Purpose
 - To specify refinements of the test approach and to identify the features to be tested by this design and its associated tests.

Test design specification

- ▣ Test design specification identifier
 - Specify the unique identifier assigned to this test design specification.
 - Supply a reference to the associated test plan.
- ▣ Features to be tested
 - Identify the test items and describe the features and combinations of features that are the object of this design specification.

Test design specification

- ▣ Approach refinements
 - Specify refinements to the approach described in the test plan.
 - Include specific test techniques to be used.
 - The method of analyzing test results should be identified.
 - Specify the results of any analysis that provides a rationale for test case selection.
 - ex) specify conditions that permit a determination of error tolerance

Test design specification

- ▣ Approach refinements
 - Summarize the common attributes of any test cases.
- ▣ Test identification
 - List the identifier and a brief description of each test case associated with this design.
 - List the identifier and a brief description of each procedure associated with this test design specification.

Test design specification

- ▣ Feature pass/fail criteria
 - Specify the criteria to be used to determine whether the feature combination has passed or failed.

Test case specification

- ▣ Purpose
 - To define a test case identified by a test design specification.

- ▣ Test case specification identifier
 - Specify the unique identifier assigned to this test case specification.

Test case specification

- ▣ Test items
 - Identify and briefly describe the items and features to be exercised by this test case.
 - For each item, consider supplying references to the following test item documentation:
 - a) Requirements specification
 - b) Design specification
 - c) Users guide
 - d) Operations guide
 - e) Installation guide

Test case specification

- ▣ Input specifications
 - Specify each input required to execute the test case and all required relationships between inputs.

- ▣ Output specifications
 - Specify all of the outputs and features.

Test case specification

- ▣ Environmental needs
 - a) Hardware
 - b) Software
 - System SW such as operating systems, compilers, simulators, and test tools.
- ▣ Special procedural requirements
 - Describe any special constraints on the test procedures that execute this test case.
- ▣ Intercase dependencies
 - List the identifiers of test cases that must be executed prior to this test case.

Test procedure specification

- ▣ Purpose
 - To specify the steps used to analyze a SW item in order to evaluate a set of features.
- ▣ Test procedure specification identifier
 - Specify the unique identifier assigned to this test procedure specification.
- ▣ Special requirements
 - Identify any special requirements that are necessary for the execution of this procedure.

Test procedure specification

- ▣ Procedure steps
 - a) Log
 - b) Set up
 - c) Start
 - d) Proceed
 - e) Measure
 - f) Shut down
 - g) Restart
 - h) Stop
 - i) Wrap up
 - j) Contingencies

Test item transmittal report

- ▣ Purpose
 - To identify the test items being transmitted for testing. It includes the person responsible for each item, its physical location, and its status.
- ▣ Transmittal report identifier
 - Specify the unique identifier assigned to this test item transmittal report.

Test item transmittal report

- ▣ Transmitted items
 - Identify the test items being transmitted, including their version/revision level.
- ▣ Location
 - Identify the location of the transmitted items.
- ▣ Status
 - Describe the status of the test items being transmitted.
- ▣ Approvals
 - Specify the names and titles of all persons who must approve this transmittal.

Test log

- ▣ Purpose
 - To provide a chronological record of relevant details about the execution of tests.

- ▣ Test log identifier
 - Specify the unique identifier assigned to this test log.

Test log

- ▣ Description
 - The following information should be considered.
 - a) For each items, supply a reference to its transmittal report, if it exist.
 - b) Identify the attributes of the environments in which the testing is conducted.
- ▣ Activity and event entries
 - For each event, including the beginning and end of activities, record the occurrence date and time along with the identity of the author.

Test log

- ▣ Activity and event entries
 - a) Execution description
 - b) Procedure results
 - c) Environmental information
 - d) Anomalous events
 - e) Incident report identifiers

Test incident report

- ▣ Purpose
 - To document any event that occurs during the testing process that requires investigation.
- ▣ Test incident report identifier
 - Specify the unique identifier assigned to this test incident report.
- ▣ Summary
 - Summarize the incident and identify the test items involved indicating their version/revision level.

Test incident report

- ▣ Incident description
 - This description should include the following items:
 - a) Inputs
 - b) Expected results
 - c) Actual results
 - d) Anomalies
 - e) Date and time
 - f) Procedure step
 - g) Environment
 - h) Attempts to repeat
 - i) Testers
 - j) Observers

Test summary report

- ▣ Purpose
 - To summarize the results of the designated testing activities and to provide evaluations based on these results.
- ▣ Test summary report identifier
 - Specify the unique identifier assigned to this test summary report.
- ▣ Summary
 - Summarize the evaluation of the test items.

Test summary report

- ▣ Variances
 - Report any variances of the test items from their design specifications.
- ▣ Comprehensiveness assessment
 - Evaluate the comprehensiveness of the testing process against the comprehensiveness criteria specified in the test plan if the plan exists.
- ▣ Summary of results
 - Summarize the results of testing.
- ▣ Evaluation
 - Provide an overall evaluation of each test item including its limitations. This shall be based on the test results and the item level pass/fail criteria.

Test summary report

- ▣ Summary of activities
 - Summarize the major testing activities and events.
- ▣ Approvals
 - Specify the names and titles of all persons who must approve this report.

Annex A Usage Guidelines

- ▣ Consider documenting sets of modules at the module-test level. While different test cases would be required, a common test procedure specification might be appropriate.

Annex A Usage Guidelines

Activities Types of tests	Documents							
	Test plan	Test design specification	Test case specification	Test procedure specification	Test item transmittal report	Test log	Test incident report	Test summary report
Acceptance	X	X	X	X	X		X	X
Field	X	X			X		X	X
Installation	X	X	X	X	X		X	X
System	X	X	X	X	X	X	X	X
Subsystem		X	X	X	X	X	X	X
Program		X	X					X
Module		X	X					X

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