TEST PROCESS

often combined — may occur as part of

Test Planning

Defining the **test objectives** and the approach for meeting these objectives

Major activities

With the consideration of the **constraints** imposed by the **context**:

- specifying suitable **test techniques** and tasks;

- formulating a **test schedule** for meeting a deadline.

Test plans may be **revisited** based on feedback from monitoring and control activities.

Test Work Products

Test plan which includes:

- information about test basis;

- **exit criteria**.

Test Monitoring and Control

On-going **comparison** of actual progress against planned progress

Major activities

- taking actions necessary to meet the goals of the test plan;

- checking **test results** and logs against specified coverage criteria;

- assessing the quality of component or system based on test results and logs;

- determining if more tests are needed.

*Good **traceability** between each element of the test basis and the various test work products associated with that element is important for effective test monitoring and control. It includes:*

- evaluation of test coverage;

- analyzing the impact of changes;

- making testing audible;

- improving clearness of test reports and technical aspects of testing for stakeholders;

- providing information to assess porduct quality, process capability, and project progress against business goals.

Test Work Products

Various types of **test reports**:

- **test progress reports**;

- test summary reports.

Test Analysis

Analyzing **test basis** to identify testable features and define **test conditions**
"What to test?"

Major activities

- analyzing the test basis appropriate to the considered **test level**;

- evaluating the test basis and **test items** to identify **defects**;

- identifying features and sets of features to be tested;

- defining and prioritizing test conditions for each feature;

- capturing *bi-directional traceability* between each element of the test basis and the relevant test conditions.

Test Work Products

- defined and prioritized test conditions;

- **test charters** (for **exploratory testing**);

- test basis defects report.

Test Design

Test conditions are elaborated into **high-level test cases**
"How to test?"

Major activities

- designing and prioritizing **test cases** and sets of test cases;

- identifying necessary **test data** to support test conditions and test cases;

- designing **test environment** and identifying any required infrastructure and tools;

- capturing *bi-directional traceability* between the test basis, test conditions and test cases.

Test Work Products

- high-level test cases and sets of test cases;

- design and/or identification of test data;

- design of test environment;

- identification of infrastructure and tools.

Test Implementation

Testware is created and/or completed
"Do we now have everything in place to run the tests?"

Major activities

- developing and prioritizing **test procedures**;

- creating test suites from the test procedures;

- arranging the test suites within a **test execution schedule**;

- building the test environment and verifying that everything needed has been set up correctly;

- preparing test data and ensuring it is properly loaded in the test environment;

- verifying and updating *bi-directional traceability* between the test basis, test conditions, test cases, test procedures and test suites.

Test Work Products

- test procedures and their sequence;

- test suites;

- test execution schedule;

- test data;

- test environment.

Test Execution

Test suites are **run** in accordance with test execution schedule

Major activities

- recording the IDs and versions of the test items or **test object**, **test tools**, and testware;

- executing tests either manually or by using test execution tools;

- comparing **actual results** with **expected results**;

- analyzing anomalies to establish their likely causes;

- reporting defects based on **failures** observed;

- logging the outcome of test execution (pass, fail or blocked);

- repeating test activities (execution of corrected tests, **confirmation testing**, **regression testing**);

- verifying and updating *bi-directional traceability* between the test basis, test conditions, test cases, test procedures and test results.

Test Work Products

- documentation of the status of individual test cases or test procedures;

- **defect reports**;

- documentation about which test items, test object, test tools and testware were involved in the testing.

Test Completion

Collect data from completed test activities to **consolidate experience**, testware and any other relevant information

Major activities

- checking if all defects are closed, entering change requests or product backlog items for any defects that remain unresolved;

- creating a **test summary report** to be communicated to stakeholders;

- finalizing and archiving the test environment, the test data, the **test infrastructure** and other testware for later reuse;

- handing over the testware to those who could benefit from its use (maintenance team, other projects teams);

- analyzing lessons learned from the completed test activities to determine changes needed for future iterations, releases and projects;

- using the information gathered to improve test process maturity.

Test Work Products

- test summary reports;

- action items for improvement of future projects or iterations;

- change requests or product backlog items;

- finalized testware.