# EXIN

## TMap® Suite

## Test Engineer

Edition 201610

**EXIN** | **TMap® Suite**

# Content

# 1. Overview

TMap® Suite Test Engineer (TMSTE.EN)

## Summary

The IT industry is changing rapidly and as a result, the tester profession becomes more and more complex. In recent years, the number of new development methods and IT technologies increased. Many aspects of daily life are now fully supported by the use of software, which means the importance (or demand) of functional and high quality software also increased.

The TMap Suite is the result of a complete renovation of TMap to optimally support the tester in a new era. The TMap testing method has a long history. Hundreds of organizations around the world are now using TMap, making TMap a leading standard for testing.

TMap Suite prepares a candidate to take on the testing challenges of our time.

TMap® Suite Test Engineer is based on three sources which together constitute the TMap Suite.
These are:
- The book "Neil's quest for quality, a TMap HD story". This book describes the new TMap Human Driven approach, which is specially developed for the new Agile and Human Driven world that is introduced in more and more organizations. The process is no longer leading, but the team, in which the testers themselves decide how to use a quality-driven approach to achieve the desired result.
- The book "TMap NEXT for result-driven testing." This approach suits the more traditional development environments, and is still relevant in many organizations.
- The building blocks of the website www.tmap.net describe specific test solutions to problems. These building blocks can be used in a flexible way by testers during their testing activities.

The workbook is based on these three sources and is mandatory exam literature.

The subjects of this module are:
- Framework and importance of testing
- TMap activities and TMap NEXT phases
- Test design

## Context

Holders of the TMap Suite Test Engineer certificate know how tests must be prepared, specified and executed. They know which techniques, infrastructure, and tools can be used for this purpose, and how this fits within the life cycle of a testing process.

In this certification, the test coordination and management tasks, such as setting up a test plan and creating a budget, are not tested. This is a part of the TMap Suite Test Master certification.

## Target group
The TMap® Test Engineer module is primarily intended for people for whom testing is a daily activity: (junior) professional testers. The module is also suitable for users, developers and managers who test information systems and software products. General knowledge in the field of system development and six months to one year of work experience in the testing field are recommended.

## Prerequisites for certification
The candidate must pass the exam. It is recommended to follow a training organized by an Accredited Training Provider.

## Exam details

| | |
|---|---|
| Examination type | : Computer based multiple-choice questions |
| Number of questions | : 30 |
| Pass mark | : 65% (20 out of 30) |
| Open book/notes | : no |
| Electronic equipment/aides permitted | : no |
| Time allotted for examination | : 60 minutes |

## Sample questions
You can download a sample exam at www.exin.com.

## Training
### Group size
The maximum number of course participants is 25.
*(This does not count for online or computer based training.)*

### Contact hours
The minimum number of contact hours for the course is 22. This number includes group assignments, exam preparation, and short coffee breaks. Not included are: homework, the logistics related to the exam session, the exam session and lunch breaks.

### Training provider
A list of accredited training providers can be found on EXIN's website www.exin.com.

### Estimation study load
60 hours

# 2. Exam requirements

The exam requirements are specified in the exam specifications. The following table lists the topics of the module (exam requirements). The weight of the different topics in the exam is indicated as a percentage of the total.

| Exam requirement | Exam specification | Weight (%) |
|---|---|---|
| 1 Framework and importance of testing | | 20 |
| | 1.1 Structured testing | 10 |
| | 1.2 TMap Suite | 10 |
| | | |
| 2 TMap activities and TMap NEXT phases | | 45 |
| | 2.1 Test management activities | 20 |
| | 2.2 Test engineering activities | 22 |
| | 2.3 Development testing | 3 |
| | | |
| 3 Test design | | 35 |
| | 3.1 Coverage types and test design techniques | 35 |
| | | |
| Total | | 100 |

# Exam specifications

## 1. Framework and importance of testing (20%)

1.1 Structured testing (10%)
The candidate understands the various test terms.
The candidate can:
1.1.1 describe testing and evaluation and what testing delivers;
1.1.2 describe the test concepts and the advantages of a structured test approach;
1.1.3 the points of attention for the testing image and the skills that a tester must have

1.2 The TMap Suite
The candidate understands the elements of the TMap Suite.
The candidate can:
1.2.1 describe the TMap NEXT essentials;
1.2.2 describe the TMap HD elements;
1.2.3 describe the goal of the Building Blocks;
1.2.4 describe the importance of Built-in quality in a Quality-driven approach.

## 2. TMap activities and TMap NEXT phases (45%)

2.1 The test management activities (20%)
The candidate understands the Planning, Control and Setting up and maintaining infrastructure phases.
The candidate can:
2.1.1 describe the Planning, Control and Setting up and maintaining infrastructure phases
2.1.2 name and explain quality characteristics and test types
2.1.3 describe a test environment
2.1.4 name examples of types of test tools
2.1.5 explain the advantages of using test tools.

2.2    TMap test engineering activities (22%)
       The candidate understands the relation between the test engineering activities.
       The candidate can:
       2.2.1  give examples of activities and objectives of the Preparation,
              Specification, Execution and Completion phases;
       2.2.2  explain the sequence of the test activities, and their dependencies;
       2.2.3  execute an intake on the test basis and process and report the results;
       2.2.4  explain the various ways of using test data;
       2.2.5  explain the various test approaches;
       2.2.6  find a defect and create a defect report.

2.3    Development testing (3%)
       The candidate has knowledge of development testing.
       The candidate can:
       2.3.1  describe the characteristics, context, advantages and disadvantages of
              development testing.


3.    Test design (35%)

3.1    Coverage types and test design techniques (35%)
       The candidate understands the coverage types and test design techniques and
       can apply them.
       The candidate can:
       4.1.1  explain the essential concepts related to test design;
       4.1.2  explain and apply the various coverage types;
       4.1.3  explain and apply the various test design techniques;
       4.1.4  create test cases based on a given test basis and a given coverage type
              and/or test design technique.

# 3. List of basic concepts

This list contains the terms with which candidates should be familiar. Terms are listed in alphabetical order. For concepts whose abbreviation and full name are included in the list, both can be examined separately.

- acceptance test
- acceptance testing
- accuracy
- action
- adaptive
- agile
- alternative test basis
- appearance
- BDTM aspects: Risk, Result, Time, Cost
- boundary value analysis
- build & deploy scripts
- Building Blocks
- Built-in quality
- business case
- business driven test management (BDTM)
- business-driven
- central starting point
- characteristic
- checklist
- completeness
- completion phase
- condition
- condition coverage
- condition/decision coverage
- connectivity
- continuity
- Continuous Integration
- control phase
- control phase of the total test process
- corrective measures
- coverage
- coverage group
- coverage ratio
- coverage type
- critical path
- CRUD
- data
- Data Combination Test (DCoT)
- data controllability
- Data Cycle Test (DCyT)
- decision coverage
- decision points

- Decision Table Test (DTT)
- defect
- defect report
- defects administration
- degradation factor
- detective measures
- development testing
- development tests
- DSDM
- dynamic explicit testing
- dynamic implicit testing
- efficiency
- Elementary Comparison Test (ECT)
- equivalence classes
- Error Guessing (EG)
- essentials
- estimation
- evaluating the test process
- evaluation
- execution phase
- Exploratory Testing (ET)
- eXtreme Programming (XP)
- fail-over possibilities
- fault paths
- filter
- flexibility
- Functional Acceptance Test (FAT)
- functionality
- heuristic evaluation
- information security
- infrastructure
- initial situation
- inspection
- IT governance
- iteration model
- Key Performance Indicators (KPIs)
- life cycle model
- load
- load model
- load profiles
- logical test case
- maintainability
- manageability
- master test plan (MTP)
- measurement plan
- metrics
- Model Based Review (MBR)
- Model Based Test Design (MBTd)
- Model Based Testing (MBT)
- modified condition/decision coverage
- multiple condition coverage

- Musing
- neutral value
- n-wise testing
- object part
- operational profiles
- operator
- Pair Programming
- pairwise testing
- paths
- performance
- permanent test organization
- physical test case
- planning phase
- planning phase of the total test process
- portability
- preparation phase
- presentation
- preserving the testware
- pre-test
- preventive measures
- priority
- Process Cycle Test (PCT)
- Production Acceptance Test (PAT)
- product risk
- product risk analysis
- prototype
- pseudo-code
- quality
- quality assurance
- quality characteristic
- quality management
- Quality-driven approach
- Real-Life Test (RLT)
- recoverability
- regression
- regression test
- regression testing
- release advice
- reliability
- requirements
- retests
- reusability
- review
- right paths
- risk class
- robustness
- RUP
- SCRUM
- SDM
- security
- Semantic Test (SEM)

- setting up and maintaining infrastructure phase
- severity
- specification phase
- starting point
- static testing
- stress
- structured testing
- suitability
- suitability (of infrastructure)
- Syntactic Test (SYN)
- system test
- system testing
- (system) development method: waterfall, agile, incremental, iterative
- techniques
- Test approach: experience-based, coverage based
- test basis
- test benefits
- test case
- test depth level N
- test design
- test design technique
- test environment
- test estimation
- test goal
- test harness
- test image
- test infrastructure coordinator
- test thoroughness
- test level
- test manager
- test method
- test object
- test object intake
- test organization
- test plan
- test policy
- test professional
- test roles
- test script
- test situation
- test strategy
- test tool
- test type
- test unit
- test variety
- testability
- testability review
- testability review report
- Test-Driven Development (TDD)
- testing
- testware

- TMap essentials: Structured test process, Tool box, BDTM, Adaptive
- TMap HD elements: Simplify, Integrate, Industrialize, People, Confidence
- tooling
- tools for debugging and analyzing the code
- tools for designing the test
- tools for executing the test
- tools for planning and controlling the test
- unit integration test (UIT)
- unit test (UT)
- unstructured testing
- usability
- User Acceptance Test (UAT)
- user-friendliness
- V model
- walkthrough
- waterfall

# 4.  Literature

**Exam literature**

**A**      **Workbook TMap® Suite**
          Vianen, Sogeti Nederland BV
          www.tmap.net/certification


**Additional literature**

**B**      Koomen, T., Aalst, L. van der, Broekman, B., Vroon, M.
          **TMap® Next for result-driven testing**
          Vianen, Sogeti Netherlands BV, 2014
          ISBN 9789075414806
          **Formerly published by:**
          UTN Publishers, 's Hertogenbosch, The Netherlands, 2006
          ISBN 9789072194800

**C**      Boersma, A., Vooijs, E, Veltman, T.
          **Neil's Quest for Quality**
          A TMap® HD Story
          Vianen, Sogeti Nederland BV, 2014
          ISBN      9789075414837
          E-ISBN   9789075414844

## Overview of the literature

| Exam specification | Literature |
|---|---|
| 1.1 | **A:** § 4.1.1, § 4.1.3, § 4.2 |
| 1.2 | **A:** Chapter 1<br>§ 2.6, § 2.17<br>§ 4.1 |
| 2.1 | **A:** § 2.11, § 2.14, § 2.16<br>§ 4.3<br>§ 4.5, § 4.6<br>§ 4.4 |
| 2.2 | **A:** § 2.9<br>§ 4.1.2<br>§ 4.1.5<br>§ 4.3.5 up to and including § 4.3.8<br>§ 4.7 |
| 2.3 | **A:** § 4.1.2<br>§ 4.1.6<br>§.4.8 |
| 3.1. | **A:** Chapter 3 |

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