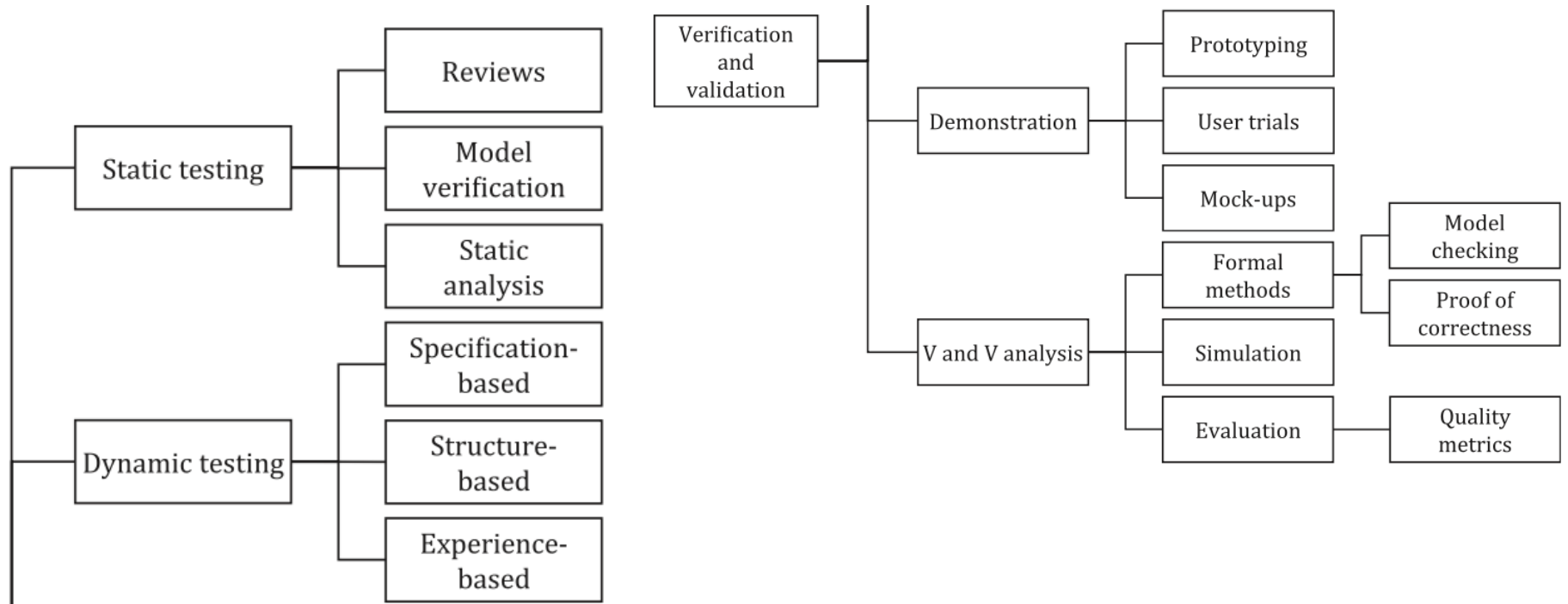# IEC 29119 Overview

BSI Standards Publication

Software and systems engineering — Software testing

Part 1: General concepts

V&V methods or practices

Test approach choices

Levels of testing

Unit testing
Integration testing
System testing
System integration testing
Acceptance testing
— User acceptance testing
— Operational acceptance
testing
— Factory acceptance testing
— Alpha testing
— Beta testing
— Production verification
testing

Test practices

Model-based testing
Scripted testing
Exploratory testing
Experience-based testing
Manual testing
A/B testing
Back-to-back testing
Mathematical-based testing
Fuzz testing
Keyword-driven testing
Automated testing
— Capture-replay driven
— Data-driven

Test approach choices

Types of testing

Functional testing
Accessibility testing
Compatibility testing
Conversion testing
Disaster/recovery testing
Installability testing
Interoperability testing
Localization testing
Maintainability testing
Performance-related
testing
    — Performance
    — Load
    — Stress
    — Capacity
    — Recovery
Portability testing
Procedure testing
Reliability testing
Security testing
Usability testing

Static testing

Reviews (ISO/IEC 20246)
Static analysis
Model verification

Test approach choices

Test design techniques / measures

Specification-based:
— Equivalence partitioning
— Classification tree method
— Boundary value analysis
— Syntax testing
— Combinatorial testing
— All combinations
— Pairwise
— Each choice
— Base choice
— Decision table testing
— Cause-effect graphing
— State transition testing
— Scenario testing
— Use case testing
— Random testing
— Metamorphic testing
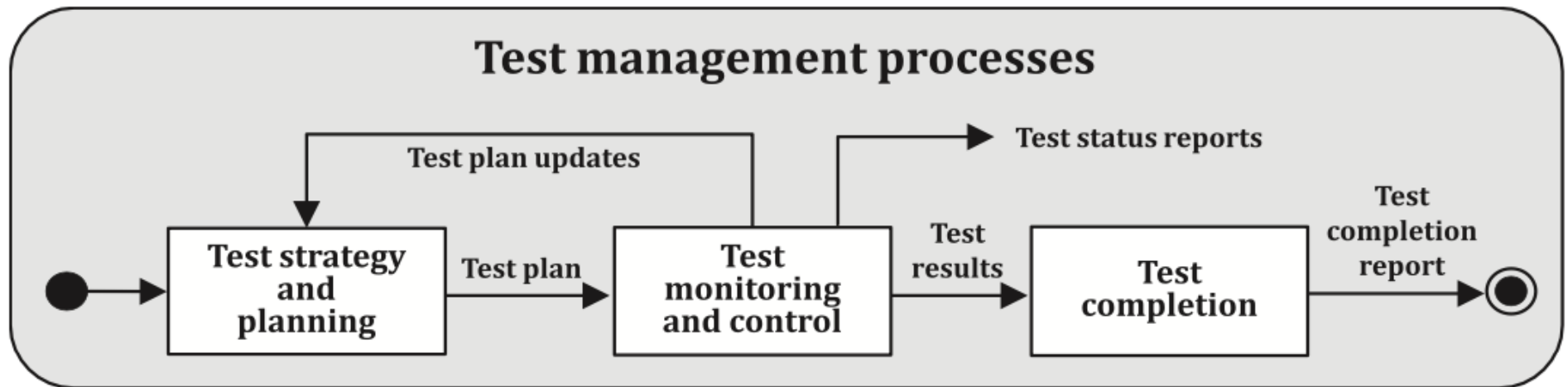— Requirements-based testing

Structure-based:
— Statement testing
— Branch testing
— Decision testing
— Branch condition testing
— Branch condition combination testing
— MC/DC testing
— Data flow testing
— All-definitions testing
— All-C-uses testing
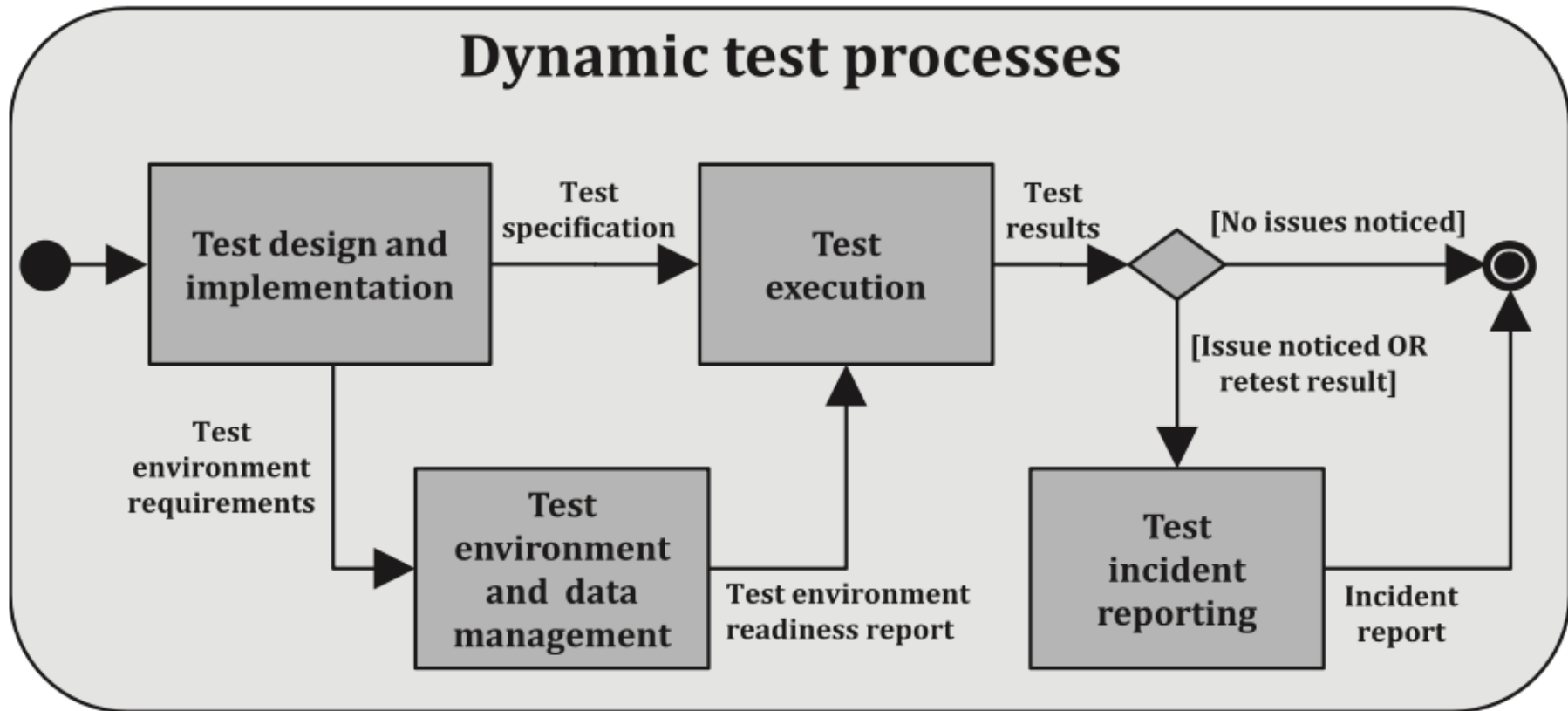— All-P-uses testing
— All-uses testing
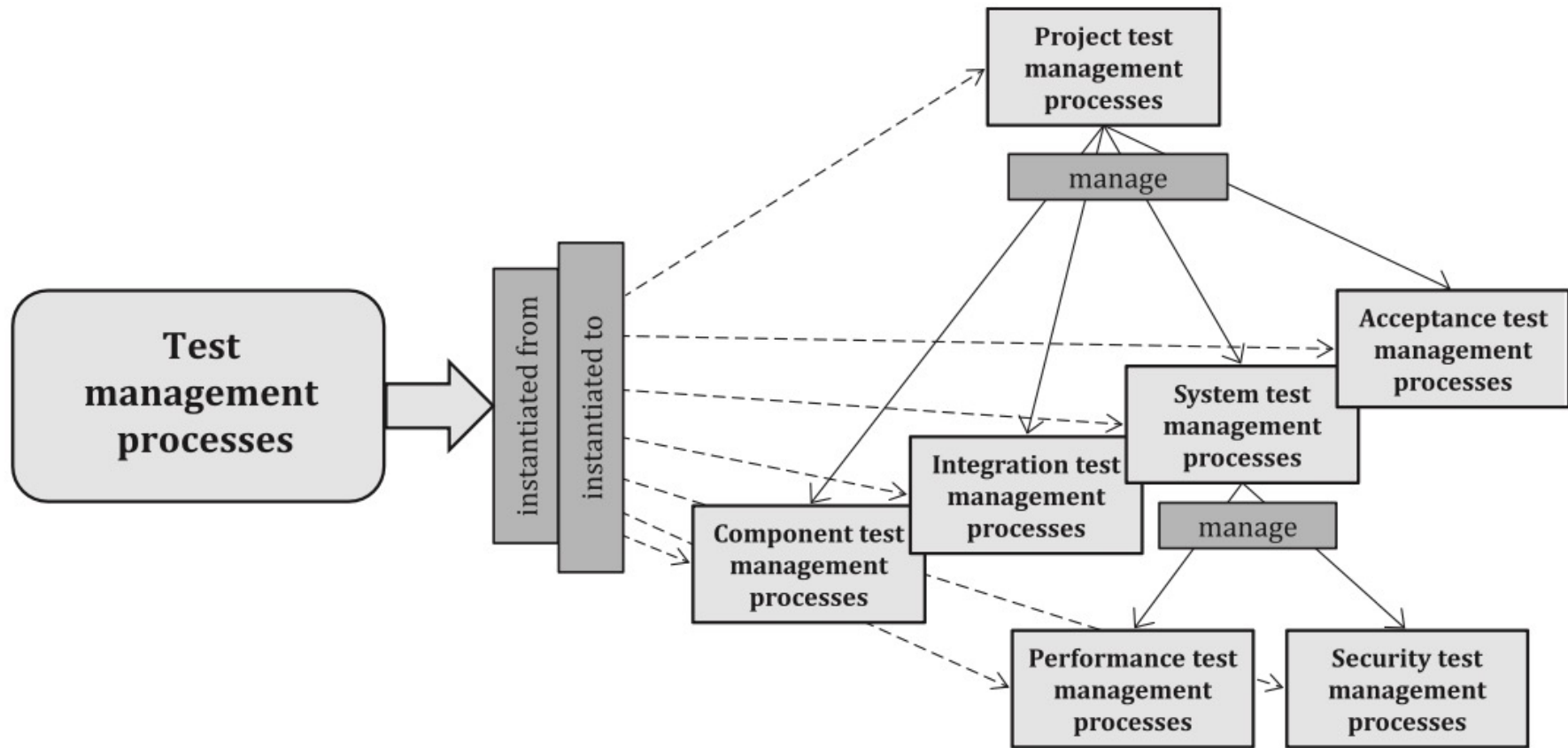— All-DU-paths testing

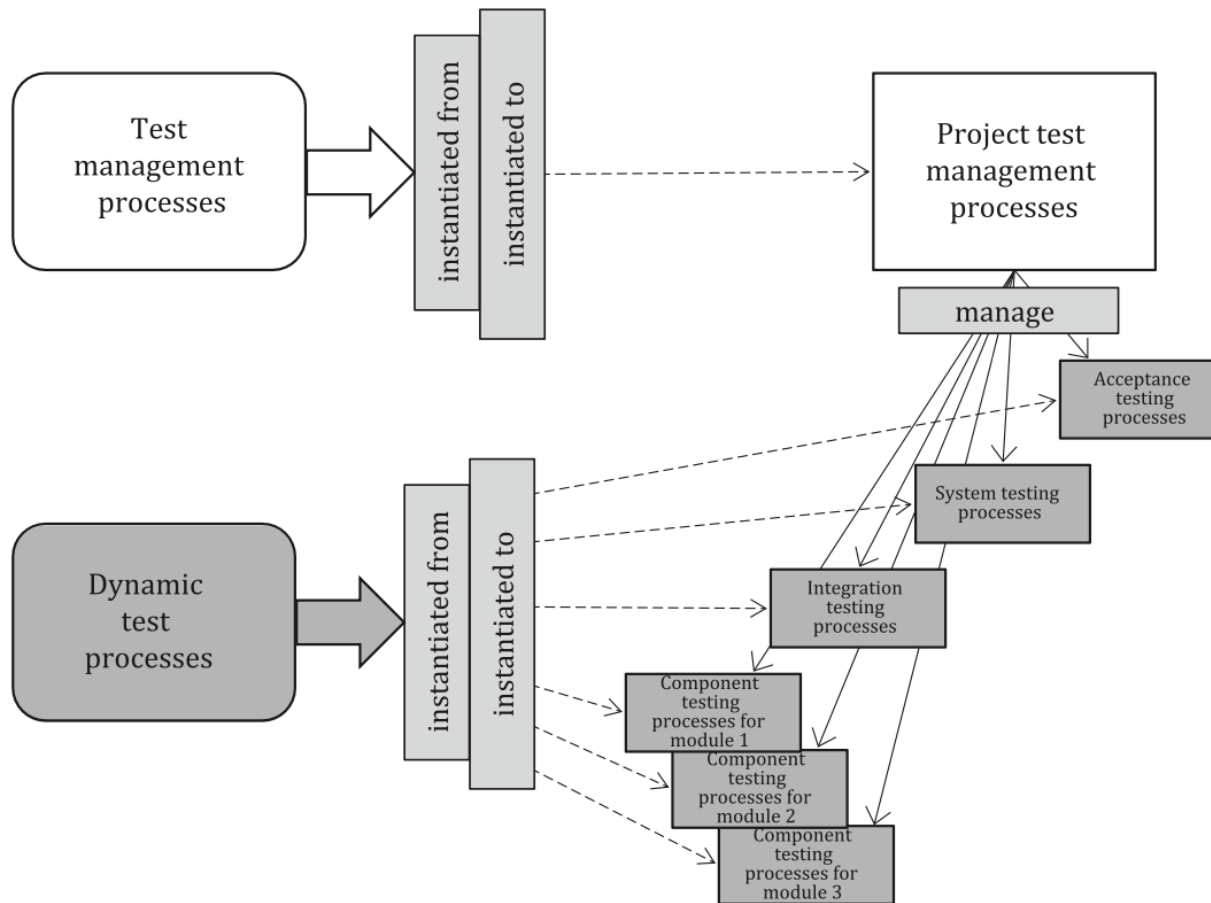Experience-based:
— Error guessing

Managing Tests

Test management processes

- Test strategy and planning
- Test plan → Test monitoring and control
- Test plan updates
- Test results → Test completion
- Test status reports
- Test completion report

Dynamic Testing

Dynamic test processes

Test Management

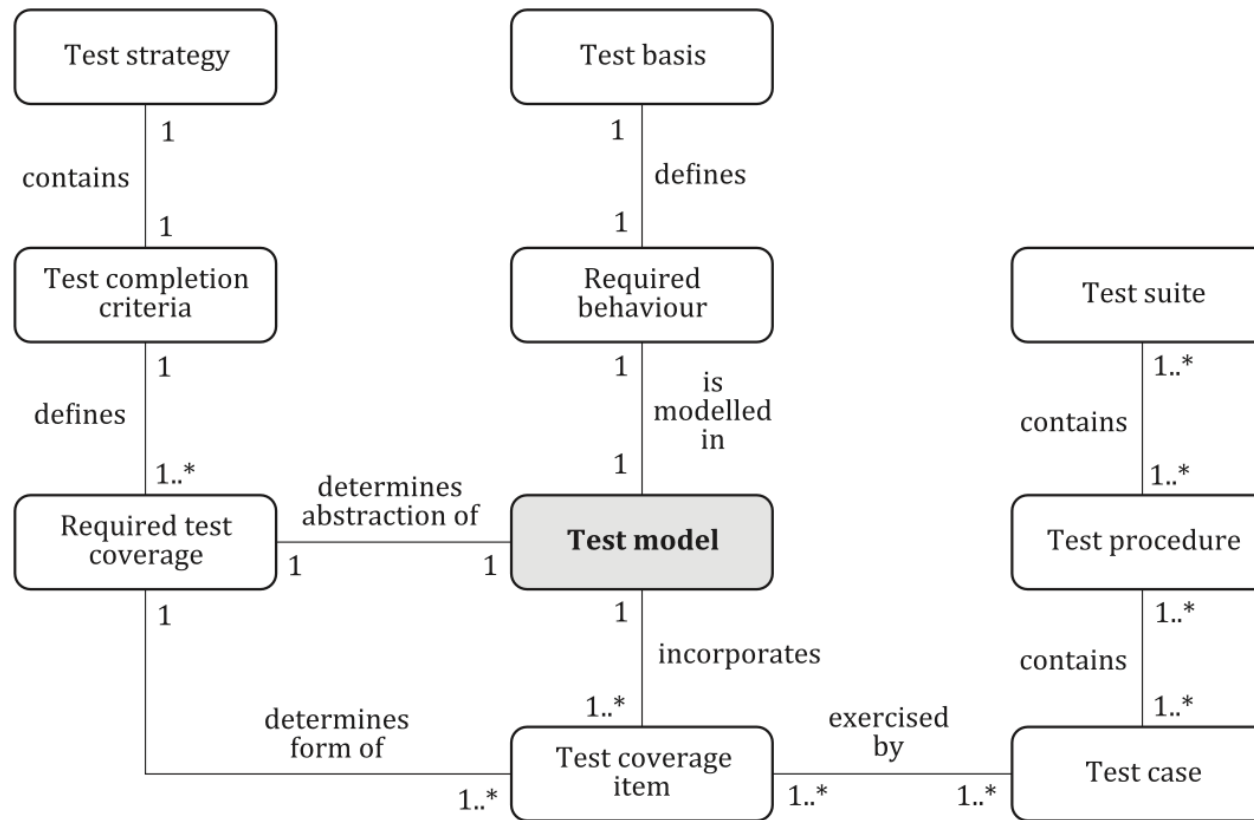# Multiple Processes

Test model

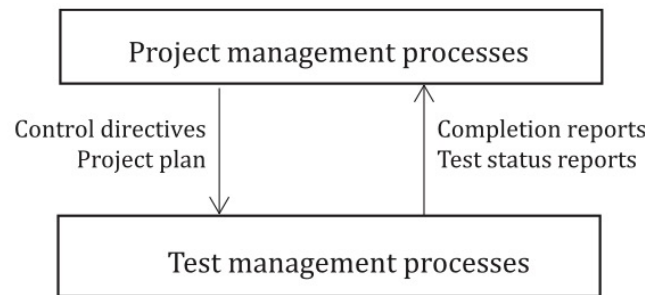**Figure 8 — Test model in perspective**

Testing in a project

Figure 9 — Relationship between the overall project and the testing