WHAT IS THE ISTQB®?

• ISTQB®: International Software Testing Qualifications Board (www.istqb.org):
  – Non-profit association
  – Founded in 2002
  – Headquartered in Belgium
  – Has its own constitution, rules and regulations
  – Composed of volunteer international Testing Experts
  – Responsible for the “ISTQB® Certified Tester” scheme worldwide

• ISTQB® is the world’s leading organization for Software Testing Certification

Advancing the software testing profession
ISTQB® VIDEOS

- ISTQB® Videos give you insights into the ISTQB® Certified Tester scheme

http://www.istqb.org/introduction-to-istqb.html
“To continually improve and advance the software testing profession by:
Defining and maintaining a Body of Knowledge which allows testers to be certified based on best practices, connecting the international software testing community, and encouraging research.”
1) We promote the value of software testing as a profession to individuals and organizations.

2) We help software testers to be more efficient and effective in their work, through the certification of competencies.

3) We enable testers to progress their career through a Professionals’ Code of Ethics and a multi-level certification pathway that provides them with the skills and knowledge they need to fulfil their growing responsibilities and to achieve increased professionalism.

4) We continually advance the Testing Body of Knowledge by drawing on the best available industry practices and the most innovative research, and we make this knowledge freely available to all.

5) We set the criteria for accrediting training providers, to ensure consistent delivery of the Body of Knowledge, worldwide.
6) We regulate the content and coverage of exam questions, the examination process, and the issuing of certifications by official examination bodies.

7) We are committed to expanding software testing certifications around the world, by admitting member boards into the ISTQB®. These boards adhere to the constitution, bylaws, and processes defined by the ISTQB®, and participate in regular audits.

8) We nurture an open international community, committed to sharing knowledge, ideas, and innovations in software testing.

9) We foster relationships with academia, government, media, professional associations and other interested parties.

10) We provide a reference point against which the effectiveness of testing services can be evaluated, by maintaining our prominence as a respected source of knowledge in software testing.
ISTQB® VALUES

INTERNATIONAL PRESENCE
PROFESSIONALISM
CONTINUOUS LEARNING
OPENNESS
KNOWLEDGE SHARING
NON-PROFIT INDEPENDENCY
INTEGRITY
ACTIVE MEMBER BOARDS
CONSISTENCY
ISTQB® VALUE CHAIN

- Working Groups: [http://www.istqb.org/about-istqb/working-groups.html](http://www.istqb.org/about-istqb/working-groups.html)
- Member Boards: [http://www.istqb.org/istqb-where-you-are/your-local-member-board.html](http://www.istqb.org/istqb-where-you-are/your-local-member-board.html)
- Training Providers: [http://www.istqb.org/istqb-where-you-are/find-a-training-provider.html](http://www.istqb.org/istqb-where-you-are/find-a-training-provider.html)
- Exam Providers: [http://www.istqb.org/istqb-where-you-are/find-an-exam-provider.html](http://www.istqb.org/istqb-where-you-are/find-an-exam-provider.html)
- ISTQB® Partners: [http://www.istqb.org/partner/istqb-partners.html](http://www.istqb.org/partner/istqb-partners.html)
ISTQB® ECO-SYSTEM

ISTQB®
- Creation of new syllabi
- Definition of worldwide rules
- Working Group activities

Exam Provider
- Exam administration
- Issue of certificates

(Note: these tasks can be performed by the Member Board)

Member Board
- Translation / release of new syllabi
- Accreditation of training providers
- Creation and release of exam questions
- Adoption of ISTQB® rules
- Contribution to ISTQB® Working Groups
- Exam Administration
- Issue of certificates

Certified Tester

Accredited Training Provider
- Creation of course materials
- Delivery of courses
ISTQB® WORKING GROUPS (WGs)

- Training Providers
- Exam Providers
- Member Boards

ISTQB® GENERAL ASSEMBLY

- Glossary WG
- Foundation WG
- Advanced WG
- Expert WG
- Executive Committee
- Governance
- Product Development Steering Committee
- TBOK WG
- Exam WG
- Release Management
- Marketing WG
- Audit WG
- Processes WG
1. Introduction to ISTQB®
2. Benefits
3. Syllabi
4. Exams
5. ISTQB®: Worldwide Footprint
6. ISTQB® Partner Program
7. Special Initiatives
8. ISTQB® Next Steps
9. Contacts
Software engineering and software project management are complex activities. Both software development and software management have dozens of methodologies and scores of tools available that are beneficial. In addition, there are quite a few methods and practices that have been shown to be harmful.

In order to evaluate the effectiveness or harm of various methods and practices Capers Jones has developed a scoring method.

The data for the scoring comes from observations among about 150 Fortune 500 companies, some 400 smaller companies, and 30 government organizations. Negative scores also include data from 15 lawsuits. The rankings are based on about 20,000 projects that span 50 industries and 24 countries.

In the following some factors related to testing are presented, with their impact in terms of reduction or increase in project work hours wrt to projects consisting of traditional application development methods such as “waterfall” development performed by organizations that do not have apply systematically sound software engineering practices.

### INCREASING PRODUCTIVITY OF SW PROJECTS

**ISTQB® CERTIFICATION CAN HELP**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Impact on productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced test teams</td>
<td>12% Improvement</td>
</tr>
<tr>
<td><strong>Testing by certified test personnel</strong></td>
<td>7% Improvement</td>
</tr>
<tr>
<td>Testing by developers only</td>
<td>6% Worsening</td>
</tr>
<tr>
<td>Informal test case design</td>
<td>8% Worsening</td>
</tr>
<tr>
<td>Inexperienced test teams</td>
<td>15% Worsening</td>
</tr>
<tr>
<td>Truncating testing to &quot;meet schedule&quot;</td>
<td>45% Worsening</td>
</tr>
</tbody>
</table>

(Capers Jones, *Scoring and evaluating software methods, practices, and results*, version 15.0, September 6, 2014)
Technavio, an independent technology research and advisory company, analyzed the key challenges faced by the Global Software Testing Services market, highlighting in particular the “Shortage of Skilled Labor”

- The Global Pure Play Software Testing Services market is growing rapidly, thus increasing the demand for skilled labor. However, this has created a disparity in supply and demand, as a result of which, sourcing and retaining skilled labor has become a challenge.

- The shortage of availability of required skills is now becoming a major challenge for the software testing organizations.

Since the current educational system is not geared up to the required standards and demands of the market, this challenge is expected to have a bigger impact on the market in the future.

(Global Software Testing Services Market 2011-2015, Technavio)
As part of its commitment to continuous improvement and the advancement of the software testing profession, in 2013 ISTQB® conducted an international online survey for test engineers and managers.

The survey was open from June to September 2013 and several thousand responses were received from almost 70 countries; in particular, respondents were:

- 2855 test engineers
- 779 test managers

In the remainder of this presentation, references will be made to some key results of the survey.

The full report is available for free download from the ISTQB® Web Site.

A new survey will be conducted in early 2016.
BENEFITS FOR PROFESSIONALS

• International recognition of acquired competencies and skills
• Authorized to use the “Certified Tester” logo (specifying the level of certification)
• Whole of career path support, from Foundation to Expert level
• Higher appeal in the labor market
Would you recommend the ISTQB® Foundation Level (CTFL) certification to your colleagues?

Both Test Engineers and Test Managers are highly satisfied with the ISTQB® CTFL certifications and happy to recommend these to their colleagues (91% - Test Engineers, 94% - Test Managers).
BENEFITS FOR COMPANIES

• ISTQB® certification can provide a competitive advantage for companies, promising a higher level of reliability of the applications being developed due to efficient and cost effective testing practices derived from the ISTQB® competencies

• Consulting companies with certified staff can offer higher-level services to customers, increasing revenues and brand value

• ISTQB® has defined a “Partner Program” for companies that engage a large number of certified testers
As a Test Manager, what percentage of your testing staff would you like to see certified at the ISTQB® Foundation Level?

- “0% of staff certified”: 3%
- “1-49% of staff certified”: 9%
- “50-99% of staff certified”: 33%
- “100% of staff certified”: 55%

Test Managers appear to see a high value in having their staff trained and certified. Around 88% of Test Managers would like to see more than half of their testing staff being certified at the ISTQB® Foundation Level. On average, the desired number of certified staff is 75%.
BENEFITS FOR ATPs
(Accredited Training Providers)

• Educational institutions and consulting companies may become an ISTQB® Accredited Trainer Provider (ATP) according to processes and rules defined at the international level

• Accredited Training Providers ensure a high standing of training is delivered through having:
  • certified trainers
  • the content, quality and syllabus coverage of training materials checked by ISTQB® Boards
  • advance notice of changes to the ISTQB® Glossary and syllabi

• Accredited Training Providers are entitled to use relevant logos and are listed in the ISTQB® Website
BENEFITS FOR ATPs - SURVEY

• How significant do you think the training was in your certification success?

Almost 70% of the survey participants felt that formal training was a significant part of their certification success.

The ISTQB® provides strong support for training providers and accredited training will continue to be an integral part of certification success.
• Eurostar, one of the major testing conferences, has conducted a survey involving 631 professional software testers and testing team leads or testing and quality assurance managers from major companies across Europe


• In accordance to the survey, 85% of the respondents have an ISTQB® Foundation certificate and 26% have also an ISTQB® Advanced certification
The same survey shows that the value of certifications is perceived to be high.

<table>
<thead>
<tr>
<th></th>
<th>Agree (Somewhat or Strongly)</th>
<th>Disagree (Somewhat or Strongly)</th>
<th>Neither or Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are of value to me</td>
<td>74%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Are something I am proud of</td>
<td>66%</td>
<td>11%</td>
<td>24%</td>
</tr>
<tr>
<td>Helped me get a job/promotion</td>
<td>49%</td>
<td>21%</td>
<td>29%</td>
</tr>
<tr>
<td>Were a worthwhile undertaking</td>
<td>68%</td>
<td>9%</td>
<td>23%</td>
</tr>
<tr>
<td>Have no bearing on how I test</td>
<td>33%</td>
<td>39%</td>
<td>28%</td>
</tr>
</tbody>
</table>
SYLLABI: GENERAL INTRODUCTION

3 Syllabi and Extensions

3.1 General Introduction

3.2 Foundation Level

3.3 Agile Tester

3.4 Advanced Level

3.5 Expert Level
• ISTQB® has defined three levels of syllabi:
  - Foundation
  - Advanced (Test Manager, Test Analyst, Technical Test Analyst)
  - Expert (Improving the Testing Process, Test Management, Test Automation Engineering, Security Testing, etc.)

• Syllabi are publicly available for download from the ISTQB® Website (http://www.istqb.org/downloads.html)

• Syllabi are written by testing experts and continuously reviewed and improved

• Terms used in the ISTQB® syllabi are defined in the ISTQB® Glossary (http://www.istqb.org/downloads/viewcategory/20.html)

• Syllabi and Glossary are translated in many languages by the ISTQB® Member Boards; please refer to their Websites to download free-of-charge the documents translated into local languages
3 Syllabi and Extensions

3.1 General Introduction

3.2 Foundation Level

3.3 Agile Tester

3.4 Advanced Level

3.5 Expert Level
## ISTQB® FOUNDATION LEVEL

<table>
<thead>
<tr>
<th>ISTQB® - FOUNDATION LEVEL</th>
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</thead>
<tbody>
<tr>
<td>Fundamentals of Testing</td>
</tr>
<tr>
<td>Testing Throughout the Software Life Cycle</td>
</tr>
<tr>
<td>Static Techniques</td>
</tr>
<tr>
<td>Testing Design Techniques</td>
</tr>
<tr>
<td>Test Management</td>
</tr>
<tr>
<td>Tool Support for Testing</td>
</tr>
<tr>
<td>Why is Testing Necessary?</td>
</tr>
<tr>
<td>Software Development Models</td>
</tr>
<tr>
<td>Static Techniques and the Test Process</td>
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<tr>
<td>The Test Development Process</td>
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<tr>
<td>Test Organization</td>
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<tr>
<td>Types of Test Tools</td>
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<tr>
<td>What is Testing?</td>
</tr>
<tr>
<td>Test Levels</td>
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<tr>
<td>Review Process</td>
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<tr>
<td>Categories of Test Design Techniques</td>
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<tr>
<td>Test Planning and Estimation</td>
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<tr>
<td>Effective use of Tools: Potential Benefits and Risks</td>
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<tr>
<td>Seven Testing Principles</td>
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<tr>
<td>Test Types</td>
</tr>
<tr>
<td>Static Analysis by Tools</td>
</tr>
<tr>
<td>Specification-based Techniques (black-box)</td>
</tr>
<tr>
<td>Test Progress Monitoring and Control</td>
</tr>
<tr>
<td>Introducing a Tool into an Organization</td>
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<tr>
<td>Fundamental Test Process</td>
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<tr>
<td>Maintenance Testing</td>
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<tr>
<td>Structure-based Techniques (white-box)</td>
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<tr>
<td>Configuration Management</td>
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<tr>
<td>The Psychology of Testing</td>
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<tr>
<td>The Psychology of Testing</td>
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<tr>
<td>Experience-based Techniques</td>
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<tr>
<td>Risk and Testing</td>
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<tr>
<td>Code of Ethics</td>
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<td>Choosing Test Techniques</td>
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<tr>
<td>Incident Management</td>
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</tbody>
</table>
As a Test Engineer, what was your motivation in obtaining your ISTQB® CTFL certification?

The majority of Test Engineers took the ISTQB® CTFL certification in order to enhance their career path (80%) and develop their testing skills (70%).

Some believe it will help them get more recognition from their colleagues (25%) or increase their income (20%).
As a Test Manager, what was your motivation to have your employees achieve ISTQB® Foundation Level (CTFL) certification?

- Testing quality improvement
- Employee career path development
- Company image improvement
- Customer’s demand
- Employee incentive
- Company policy

The majority of Test Managers believe that participating in the ISTQB® certification scheme will positively impact testing quality in their projects (75%), and will enable them to provide positive career path to their employees (55%).

Some Test Managers believe their company image will improve (30%) as a result of having their employees participate in the ISTQB® certification.
3 Syllabi and Extensions
3.1 General Introduction
3.2 Foundation Level
3.3 Agile Tester
3.4 Advanced Level
3.5 Expert Level
In order to satisfy the increasing demand for vertical testing competences, ISTQB® has introduced the concept of “Extension”

An “Extension” is a training and certification module focused on a specific topic, for instance:
- Domain-specific testing practices
- Specific Testing Techniques
- Specific Testing Methods

The ISTQB® Foundation Level Certification is a pre-requisite

The first extension is focused on “Agile Tester”, released in June 2014

MBT (Model-Based Testing) extension is also in road-map
• Would you be interested in Agile Tester certification?

Approximately 85% of the respondents are definitely of possibly interested in Agile testing certification. With the planned release in early 2014 of the Agile tester certification extension to the Foundation Level, ISTQB® is well-positioned to respond to the expected demand.
THE CONTRIBUTION OF AGILE TESTERS

- Agile testers should:
  - Collaborate in an agile team, being familiar with agile principles and practices
  - Adapt existing testing experience, knowledge, and best practices
  - Support the agile team in planning test related activities
  - Apply relevant test methods and techniques
  - Assist in test automation
  - Help business stakeholders define understandable and testable user stories and acceptance criteria
  - Work and share information with other team members

- An ISTQB® Agile Tester should work effectively within an agile team and environment
ISTQB® FOUNDATION LEVEL
AGILE TESTER

Agile Software Development
The Fundamentals of Agile Software Development
Aspects of Agile Approaches

Fundamental Agile Testing Principles, Practices and Processes
The Differences between Testing in Traditional and Agile Approaches
Status of Testing in Agile Projects
Role and Skills of a Tester in an Agile Team

Agile Testing Methods, Techniques and Tools
Agile Testing Methods
Assessing Quality Risks and Estimating Test Effort
Techniques in Agile Projects
Tools in Agile Projects
LEARNING OBJECTIVES OF CHAPTER 1

• The fundamentals of agile software development
  – Recall the basic concept of agile based on the Agile Manifesto
  – Understand the advantages of the whole-team approach
  – Understand the benefits of early and frequent feedback

• Aspects of agile approaches
  – Recall agile software development approaches
  – Write user stories in collaboration with development, business representative and product owner
  – Understand how retrospectives can be used as a mechanism for process improvement in agile projects
  – Understand the use and purpose of continuous integration
  – Know the differences between iteration and release planning, and how a tester adds value to each of activity
LEARNING OBJECTIVES OF CHAPTER 2

• Differences between testing in traditional and agile approaches
  – Describe the differences between testing activities in agile projects and non-agile projects
  – Describe how coding and testing activities are integrated in agile
  – Describe the role of independent testing in agile projects

• Status of testing in agile projects
  – Describe the basic set of work products used to communicate the status of testing in an agile project, including test progress and product quality
  – Describe the process of evolving tests across multiple iterations and explain why test automation is important to manage regression risk in agile projects

• Role and skills of a tester in an agile team
  – Understand the skills of a tester in an agile team
  – Understand the role of a tester within an agile team
LEARNING OBJECTIVES OF CHAPTER 3 (1)

- Agile testing methods
  - Recall the concepts of test driven development, acceptance test driven development and behavior driven development
  - Recall the concepts of the test pyramid
  - Summarize the testing quadrants and their relationships with testing levels and testing types
  - For a given agile project, practice the role of a tester in Scrum team

- Assessing quality risks and estimating test effort
  - Assess product quality risks within an agile project
  - Estimate testing effort based on iteration content and product quality risks
LEARNING OBJECTIVES OF CHAPTER 3 (2)

• Techniques in agile projects
  – Interpret relevant information to support testing activities
  – Explain to business stakeholders how to define testable acceptance criteria
  – Given a user story, write acceptance test driven development test cases
  – Write test cases, for both functional and non-functional aspects, using black box test design techniques based on given user stories
  – Execute exploratory testing to support the testing of an agile project

• Tools in agile projects
  – Recall different tools available to testers according to their purpose and to the activities in agile projects
The target professionals are:

- Testers experienced with traditional SDLCs
- Entry-level testers with an interest in agile testing
- Experienced developers with a lot to a little knowledge of testing who work in agile projects

Roles include testers, test analysts, test engineers, test consultants, test managers, user acceptance testers, software developers

The ISTQB® Foundation certificate is a pre-requisite
How important do you think it is to obtain the ISTQB® Advanced Level (CTAL) certification?

Approximately 70% of Test Managers identified that it is important to obtain the Advanced Level Certification, and this was supported by 63% of Test Engineers.
• ISTQB® Advanced Level is composed of three independent modules:
  – Test Manager (AL-TM)
  – Test Analyst (AL-TA)
  – Technical Test Analyst (AL-TTA)

• The ISTQB® Foundation Level Certification is a pre-requisite for all of them

• When achieving all the three Advanced Modules, a “Full Advanced” certificate is issued
# ISTQB® ADVANCED LEVEL
## TEST MANAGER (AL-TM)

<table>
<thead>
<tr>
<th>ISTQB®</th>
<th>ADVANCED LEVEL</th>
<th>TEST MANAGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing Process</td>
<td>Test Management</td>
<td>Reviews</td>
</tr>
<tr>
<td>Test Planning, Monitoring and Control</td>
<td>Risk-based Testing</td>
<td>Management Reviews and Audits</td>
</tr>
<tr>
<td>Test Analysis and Design</td>
<td>Test Documentation</td>
<td>Managing Reviews</td>
</tr>
<tr>
<td>Test Implementation and Execution</td>
<td>Test Estimation and Test Metrics</td>
<td>Metrics for reviews</td>
</tr>
<tr>
<td>Evaluating Exit Criteria and Reporting</td>
<td>Business Value of Testing</td>
<td>Managing Formal Reviews</td>
</tr>
<tr>
<td>Test Closure Activities</td>
<td>Distributed, Outsourced and Insourced Testing</td>
<td>Managing the Application of Industry Standards</td>
</tr>
</tbody>
</table>
# ISTQB® ADVANCED LEVEL

## TEST ANALYST (AL-TA)

<table>
<thead>
<tr>
<th>ISTQB® - ADVANCED LEVEL TEST ANALYST</th>
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</thead>
<tbody>
<tr>
<td>Testing Process</td>
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<tr>
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<tr>
<td>Test Planning, Monitoring and Control</td>
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<tr>
<td>Test Analysis and Design</td>
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<tr>
<td>Test Implementation and Execution</td>
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<tr>
<td>Evaluating Exit Criteria and Reporting</td>
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<tr>
<td>Test Closure Activities</td>
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</tbody>
</table>
# ISTQB® ADVANCED LEVEL
## TECHNICAL TEST ANALYST (AL – TTA)

<table>
<thead>
<tr>
<th>ISTQB® – ADVANCED LEVEL</th>
<th>TECHNICAL TEST ANALYST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Based Testing</td>
<td>Quality Characteristics for Technical testing</td>
</tr>
<tr>
<td>Structure-Based Testing</td>
<td>General Planning Issues</td>
</tr>
<tr>
<td>Analytical Techniques</td>
<td>Using Checklist in Reviews</td>
</tr>
<tr>
<td>Risk Identification</td>
<td>Integration and Information Interchange</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>Defining the Test Automation Project</td>
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<tr>
<td>Risk Mitigation</td>
<td>Specific Test Tools</td>
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<tr>
<td>Path Testing</td>
<td>Performance Testing</td>
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<tr>
<td>API Testing</td>
<td>Resource Utilization</td>
</tr>
<tr>
<td>Selecting a Structure-based Technique</td>
<td>Maintainability Testing</td>
</tr>
<tr>
<td>Condition Testing</td>
<td>Portability Testing</td>
</tr>
</tbody>
</table>
SYLLABI: EXPERT LEVEL

3.1 General Introduction
3.2 Foundation Level
3.3 Agile Tester
3.4 Advanced Level
3.5 Expert Level
For ISTQB®, Expert really means Expert

- “A person with the special skills and knowledge representing mastery of a particular testing subject.
- Being an expert means possessing and displaying special skills and knowledge derived from training and experience.”

Clearly stated expectations and business outcomes are established for each subject covered at Expert Level
Do you plan to obtain an ISTQB® Expert level certification in next 3 years?

More than 75% of respondents, spanning Test Engineers and Test Managers, are definitely or possibly interested in the expert level certifications. ISTQB® is working to make training and exams available as soon as possible to meet expected demand.
STATUS OF EXPERT LEVEL SYLLABI

ISTQB® Expert Level Syllabi

Module:
- Improving the Testing Process
- Test Management
- Test Automation Engineering
- Security Testing

Status:
- Released for public availability (June 2010)
- Released for public availability (June 2011)
- Released for public availability (July 2014)
- In development (Planned for 2015)
In the following, pre-conditions allowing to take Expert Level exams are shown:
• The Expert Module “Test Management” is composed of three parts:
  ➢ Strategic Test Management
  ➢ Operational Test Management
  ➢ Managing the Test Team
ISTQB® EXPERT LEVEL
STRATEGIC TEST MANAGEMENT

Missions, Policies, Strategies and Goals
Evaluating Effectiveness & Efficiency
Managing Across the Organization
Managing External Relationships
Domain and Project Factors

Missions, Policies, Metrics of Success
Effectiveness, Efficiency and Satisfaction Metrics for the Test Policy Objectives
Integrating Tools Across the Organization
Merging Test Strategies with Third Party Organizations
Test Management Considerations for Lifecycle Models

Test Strategies
Alignment of Test Policy and Strategy Within Organization
Quality Management & Testing
Managing Partial Lifecycle Models
• The Expert Module “Improving the Testing Process” is composed of two parts:
  ➢ Assessing Test Processes
  ➢ Implementing Test Process Improvement
## ISTQB® EXPERT LEVEL
### ASSESSING TEST PROCESSES

<table>
<thead>
<tr>
<th>Context of Improvement</th>
<th>Model based Improvement</th>
<th>Analytical based Improvement</th>
<th>Selecting the Approach</th>
<th>Process for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>What can be Improved?</td>
<td>Test Process Models (TPI NEXT, TMMI)</td>
<td>GQM Approach</td>
<td></td>
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<tr>
<td>Views of Quality</td>
<td>Test Content Models (CTP, STEP)</td>
<td>Measures, Metrics &amp; Indicators</td>
<td></td>
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</tr>
<tr>
<td>Generic Improvement Process (Deming, IDEAL)</td>
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</tbody>
</table>
ISTQB® EXPERT LEVEL
IMPLEMENTING TEST PROCESS IMPROVEMENT

- Process for Improvement
- Organizational Aspects
- Managing Change
- Critical Success Factors
- Adapting to Different Life Cycle Models

- Establishing a Test Improvement Approach
- Organization
- Change Management Process
- Key Success Factors
- Implementing Test Improvement
- Roles
- Human Factors
- Setting an Improvement Culture
- Skills of the Test Process Improver
EXAMS

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8. ISTQB® Next Steps
9. Contacts
• The exam is based on multiple-choice questions for Foundation and Advanced Levels
• For Expert Level, an essay is also required
• Exams can be attempted also without having attended a training course (e.g. through self-study)
To what extent do you feel the ISTQB® Foundation Level certification exam reflects the knowledge of the candidates?

More than 70% of respondents regard the ISTQB® Foundation Level certification exam as fully or exceedingly reliable and these results are consistent throughout the world; only 6% found the exam not very reliable.
## Exams Questions and Length

<table>
<thead>
<tr>
<th>Module</th>
<th>Number of Questions</th>
<th>Exam Length (in Minutes)</th>
<th>Exam Length for Non-Native Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation</td>
<td>40</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Agile Tester</td>
<td>40</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Advanced Test Manager</td>
<td>65</td>
<td>180</td>
<td>225</td>
</tr>
<tr>
<td>Advanced Test Analyst</td>
<td>60</td>
<td>180</td>
<td>225</td>
</tr>
<tr>
<td>Advanced Technical Test Analyst</td>
<td>45</td>
<td>120</td>
<td>150</td>
</tr>
</tbody>
</table>
Questions are classified according to the cognitive level, the K-level (also known as level of knowledge):

- **K1** = Remember (recognize a term or concept)
- **K2** = Understand (able to explain a concept)
- **K3** = Apply (select correct application of concept or technique)
- **K4** = Analyze (can distinguish between facts and inferences for deeper understanding)
- **K5** = Evaluate (can make judgments based on criteria and standards)
- **K6** = Create (can put elements together to form a coherent or functional whole)

The number of questions for each topic is related to the length of the topic in the syllabus

For more details, see the FAQ section in the ISTQB® Website
CRITERIA TO ACHIEVE EXPERT LEVEL

**Entry criteria**

**Recommended:**
- At least 7 years of practical testing experience
- Completion of Expert Level course

**Mandatory:**
- ISTQB® Foundation
- ISTQB® Advanced (depending on Expert Level module)
- Completion of Expert Level course (if a non-public exam is taken)

**Exit criteria**

- Exam passed (65%)
- Experience levels (may be achieved before or after passing the exam)
  - At least 5 years of practical testing experience
  - At least 2 years of industry experience in the specific Expert Level topic
## The exam

- A certification scheme at Expert Level must meet the expectations and perceptions of its stakeholders and has to be seen to be truly “expert”.
- The exam therefore consists of a multiple-choice section and a written “essay” section.
- A score of 65% and above is required to pass.

## Multiple-Choice section

- **Duration:** 1 Hour
- **25 Questions**
- **Learning objectives covered:** K2, K3, K4 (like in Advanced Level)

## Essay section

- **Duration:**
  - Reading: ½ hour
  - Answering: 2 hours
  - Add ¾ hour for non-native speakers
- **Answer 4 questions out of 5**
- **Learning objectives covered:** Mostly higher learning objectives (K5,K6)
MAINTAINING EXPERT LEVEL CERTIFICATION

Expert certification is not for life

- An Expert Level certificate is valid for 5 years
- Expert certification must be renewed using one of the following two options

Repeat the exam

- A passed exam results in certification for a further 5 years

Achieve 200 „Certification Extension Credits“ (CEC)

- CECs may be achieved in a number of areas. For example:
  - Perform a professional testing activity
  - Take a relevant training course
  - Attend a testing conference
  - Present at a testing conference
  - Teaching a relevant training course
  - Write a testing article or book
  - Actively participate in a Working Group (ISTQB® Member Boards, SIGIST, ….)

- Verifiable evidence must be submitted to the certifier
- The Certification Extension Program is published by ISTQB®
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>ISEB (Information Systems Examinations Board, part of the British Computer Society) develops the Certified Tester Syllabus. The first Software Testers are certified in 1998</td>
</tr>
<tr>
<td>2002</td>
<td>The ISTQB® (International Software Testing Qualifications Board) is founded by 8 member boards: Austria, Denmark, Finland, Germany, Sweden, Switzerland, the Netherlands and UK</td>
</tr>
<tr>
<td>2003</td>
<td>The syllabus for the “Advanced Level“ is completed</td>
</tr>
<tr>
<td>2004</td>
<td>First exams for “ISTQB® Certified Tester Advanced Level“ are released</td>
</tr>
<tr>
<td>2006</td>
<td>The number of member boards grows steadily</td>
</tr>
<tr>
<td>2007</td>
<td>The Foundation and Advanced Syllabi are enhanced</td>
</tr>
<tr>
<td>2009</td>
<td>The number of Member Boards climbs further</td>
</tr>
<tr>
<td>2009</td>
<td>The number of certifications reaches 100,000</td>
</tr>
<tr>
<td>2010</td>
<td>BCS withdraws the ISEB Test Practitioner scheme in favor of ISTQB Certified Tester Advanced Level. The first “Expert Level&quot; syllabus is released</td>
</tr>
<tr>
<td>2011</td>
<td>The number of certifications exceeds 200,000 globally</td>
</tr>
<tr>
<td>2011</td>
<td>Issue of additional Expert Level Syllabi</td>
</tr>
<tr>
<td>2012</td>
<td>New version of the Advanced Level syllabus and Glossary Testing of Terms; Activation of the “ISTQB® Partner Program”; Activation of the “ISTQB® Conference Network”; Activation of the “ISTQB® Recognized Mobile app” program; Launch of the “ISTQB® international Software Testing Excellence Award”</td>
</tr>
<tr>
<td>2013</td>
<td>The number of certifications exceeds 300,000 globally</td>
</tr>
<tr>
<td>2014</td>
<td>Agile Tester Foundation Extension Syllabus is made available</td>
</tr>
<tr>
<td>2014</td>
<td>Expert Level Test Automation Engineering Syllabus is made available</td>
</tr>
</tbody>
</table>
WORLD-WIDE COVERAGE

- Countries covered by Member Boards (49 Member Boards covering 72 countries, representing over 90% of the world-wide GDP) and Global Exam Providers
- Countries covered by Global Exam Providers

The list of Member Boards and Global Exam Providers is available on the ISTQB® Web Site
FOOTPRINT – NUMBER OF CERTIFICATIONS

• As of June 2014 the number of certifications issued is close to 354,000 with more than 12,000 new certifications being issued per quarter

• Among the technology-independent certifications schemes, ISTQB® is the third largest in the IT industry in terms of number of people certified (exceeded only by PMI and ITIL)

• ISTQB® is the largest testing certification scheme in the World and has become an International de-facto reference on recommended testing practices
The distribution of Certificates issued by ISTQB® as of June 2014 is as follows:

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>CERTIFICATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation Level</td>
<td>318,645</td>
</tr>
<tr>
<td>Advanced Level – Test Manager</td>
<td>16,625</td>
</tr>
<tr>
<td>Advanced Level – Test Analyst</td>
<td>10,726</td>
</tr>
<tr>
<td>Advanced Level – Technical Test Analyst</td>
<td>5,135</td>
</tr>
<tr>
<td>Full Advanced</td>
<td>2,615</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>353,746</strong></td>
</tr>
</tbody>
</table>
ISTQB® EXAM AVERAGE PASS-RATE

- Foundation: 74.30%
- Advanced TM: 63.02%
- Advanced TA: 55.00%
- Advanced TTA: 58.61%
• ISTQB® has a large number of Accredited Training Providers (ATPs) worldwide

• As of August 2014 there were:
  ▪ 250+ ATPs for Foundation Level
  ▪ 100+ ATPs for Advanced Level
  ▪ 2 ATPs for Expert Level

• The list of Accredited Training Providers is available on the ISTQB® Web Site
ISTQB® PARTNER PROGRAM

Provides recognition to Companies that are investing in the ISTQB® scheme

As of December 2014 ISTQB® has 83 Partners
The main benefits of the ISTQB® Partner Program are:

- International visibility of the partnership status through exposure on the ISTQB® Website
- Access to ISTQB® Conference Network events with exclusive benefits
- Access to the alpha versions of new syllabi, with the opportunity to contribute to their review
- Local benefits provided by Member Boards and Exam Providers
Companies can become ISTQB® Partners if they have a significant number of employees or external consultants working for them who have passed ISTQB® certification exams.

The Program comprises four levels of partnership, each with a different eligibility threshold:
- **Silver**: 5 Points
- **Gold**: 14 Points
- **Platinum**: 30 Points
- **Global**: a minimum of 1 Platinum Partnership and 2 Gold Partnerships in at least 2 different countries.
The partnership level of an organization is determined by the number of certification points it has accumulated:

- Foundation certification = + 1 point
- Foundation extension = + 1 point
- Advanced certification = + 3 points (for each advanced level certification module achieved)
- Expert certification = + 5 points (for each expert level certification module achieved)

Other criteria are the following:

- GOLD partnership needs at least 1 ADVANCED Level certification
- PLATINUM partnership needs at least 3 ADVANCED Level certifications
As of December 2014, ISTQB® Partnership has been achieved by 83 Companies:

- 1 Company at GLOBAL Level
- 29 Companies at PLATINUM Level
- 29 Companies at GOLD Level
- 24 Companies at SILVER Level

More information at: [www.istqb.org/partner](http://www.istqb.org/partner)
• ISTQB® promotes the “ISTQB® International Software Testing Excellence Award”, an annual prize given to somebody who has made an outstanding contribution to the field of software quality, through professional practice, innovation, or research

• Anyone can nominate a potential winner of the "ISTQB® International Software Testing Excellence Award” by filling in the Nomination Form available on the ISTQB® website
ISTQB® AWARD CRITERIA

• The winner of the Award is selected for having contributed to:
  – Increasing public awareness for the importance of software quality and testing
  – Publishing research findings in the field of software quality and testing
  – Promoting further education in software quality and testing
  – Supporting the creation of standards and recommended practices in the area of software quality and testing
  – Giving new energy to the improvement of software development and testing processes
• 2014 ISTQB® Award Winner: Capers Jones

• 2013 ISTQB® Award winner: Harry Sneed

• 2012 ISTQB® Award winner: Dorothy Graham

• ISTQB® Special Award for Lifelong Contribution to Software Testing: Boris Beizer (issued on 2012)
ISTQB® CONFERENCE NETWORK

- ISTQB® has created the “ISTQB® Conference Network” to promote the annual events around the world related to ISTQB®
- These events have to:
  - Be focused on Testing and Quality
  - Be organized or recognized by an ISTQB® Member Board or by the ISTQB® Marketing Working Group
- Recognition is based on the following criteria:
  - The event must have an open and public call for papers;
  - The selection of speeches must be performed by an independent program committee composed by several people;
  - The conference should offer at least 20% discount on fees to ISTQB® Certificate Holders;
  - The program has to include at least one official ISTQB® Speech, which is the presentation of the ISTQB® status, perspectives and product portfolio made by an ISTQB® representative or a representative of the National Board of that region;
  - Companies that have subscribed to the Partner Program will receive discounts for the participation of their employees; the discounts will grow depending on the Partnership Level (Silver, Gold, Platinum, Global)
ISTQB® has created the “ISTQB® Web and Mobile Apps” program in order to promote those applications that are based on ISTQB® referenced information.

Any person or entity can apply to have an ISTQB® recognized Web & App and, before receiving the “ISTQB® Web and Mobile Apps” logo, the Web/App will be reviewed by the ISTQB® that will check the following criteria (all of them are mandatory):

- The Web/App shall have a reference to the ISTQB® website as well as all to the ISTQB® social media
- If the Web/App makes usage of ISTQB® publicly available info (e.g.: glossary, syllabi) the provider shall keep them aligned with the latest official version issued by ISTQB® (for the English version) or by the ISTQB® Member Boards (in case of local translations)
- The Web/App shall not reference to any scheme competitive to ISTQB®
- The App must be available for download free of charge
- The Web/App shall have at least one English version

The Web/App can use the specific “ISTQB® Web and Mobile Apps” logo that will be provided after successful validation; it cannot use any other ISTQB® logos, unless specifically agreed and approved by ISTQB®
TOPICS FOR THE FUTURE - SURVEY

- Please select at least 3 topics that you would like ISTQB® to address in the future

![Bar chart showing popular topics for the future.

- Testing for Mobile Devices (Smartphones, Tablets, GPS etc...)
- Performance testing
- Usability testing
- Test metrics
- Mobile applications testing
- Testing in Cloud
- Exploratory testing
- Testing in Finance
- Systems Integration Testing
- Off-shore, On-shore, Near-shore, Managing Distributed Teams
- Testing Telecommunications
- Testing ERP systems]
ISTQB® NEXT STEPS

Market roll-out
- Agile
- Expert
- New Boards joining
- New Surveys and initiatives

New Syllabi & Exams
- Model Based Testing
- Expert - Security Testing
- Usability Testing
- Further topics undergoing definition

Maintenance & Evolution
- Glossary
- Foundation
- Advanced
ISTQB® CONTACTS AND CHANNELS

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Belgium

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www.istqb.org