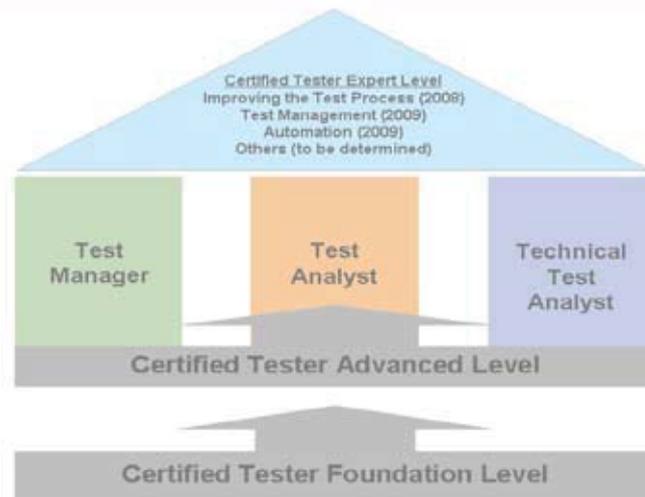


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The Magazine for Professional Testers



Security Testing



10.11.2009

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The new ISTQB® Certified Tester Advanced Level Focus on practical know-how

by Professor Mario Winter

The new ISTQB® Certified Tester Advanced Level syllabus is now finding its way into practical use. By September 2009 at the latest, all German-language course providers must either have switched to the new advanced level syllabus or have successfully completed re-accreditation. This is not just a rewrite of the “old” syllabus that has been in use since 2003 but a fundamentally revised, updated, intensified and expanded offering for software testers who want to go much further than the basic Foundation Level know-how, be it as test managers, as test analysts or as technical test analysts.

The International Software Testing Qualifications Board (ISTQB®) approved the new ISTQB® Certified Tester Advanced Level syllabus at the end of 2007 and from September 2009 at the latest all training providers must offer only courses based on this new version. What attendees will first notice is the much more extensive content and detail of the new syllabus with its integrated learning objectives. While the 2003 syllabus that is now on its way out consists of 38 pages, the new syllabus runs to 114. But the new Advanced Level testers will not just have to learn more. In the seminars a significantly larger and more intensive practical part awaits them. The ratio of classic knowledge teaching to practical exercises is about 50–50 in seminars that now take three instead of five days. It goes without saying that experienced testers are still entitled to sit the examination without attending a seminar. Extensive literature recommendations will be found on the websites <http://www.german-testing-board.info/de/buchempfehlungen.shtm>, www.istqb.org

Advanced content for advanced testers

That makes the advanced level of the Certified Tester schedule even more advanced than it al-

ready was. The wider scope and strengthening of the practical part set it apart from the basic training yet more clearly than previously (cf. chart). The new Advanced Level incorporates inter alia wide-ranging experience and best practices contributed by the now (as of March 2009) 42 national and regional boards of the ISTQB®. At the same time the working party’s international membership has helped achieve a greater degree of standardisation. National procedures that previously differed have been harmonised. This standardisation mainly benefits multinational software projects such as in connection with IT offshoring. As a result, test managers can use the same specialised terminology across continents.

Analytical thinking is in demand

The greater practical orientation of the new ISTQB® Certified Tester Advanced Level is also reflected in extended learning objectives. The previous syllabus mainly sought to ensure that graduates were able to identify and carry out the work required and to provide a degree of practical orientation. The new syllabus additionally promotes and requires a cognitive command and the ability to analyse the different situations in which advanced testers and test managers find themselves.

Here are two examples. In the seminar learners are intended to use the equivalence class analysis technique as they work through a scenario. That is a classic implementation example of the kind already included at Foundation Level. The following scenario, in contrast, requires more advanced abstraction and analytical skills. Certain key product and project figures indicate that a project has fallen behind schedule. What is the explanation for this delay, and what steps must be taken to get the project back on schedule? Context-based exercises of this kind increasingly characterise training for

the new Advanced Level and are accordingly to be found in the final exams.

The new content

The new ISTQB® Certified Tester Advanced Level distinguishes between three profiles: the test manager, the test analyst and the technical test analyst. In the past, the focus has been mainly on the predominantly functionally oriented test manager. In the future, training will include much more content and more techniques geared toward the other two specialised areas. All three areas are now anchored in the training as areas of equal value and are clearly distinguished from each other, being taught and examined separately.

The ISTQB® has set the new Advanced Level more clearly apart from the Foundation Level across the board. Each chapter taught has clear learning objectives. In addition, the new Advanced Level distinguishes between specific forms of software systems. Attend training courses and you will get to know some aspects of testing embedded systems such as those that are used in the automotive environment.

The test manager

Training to become a test manager offers inter alia the following new and improved content:

- How can the benefit of testing be measured and shown for the business objectives in question?
- What are the specifics of distributed testing in the context of either outsourcing or insourcing?
- What is Failure Modes and Effects Analysis (FMEA) and how can it be deployed?
- What can test management accomplish in specific contexts when testing non-func-

tional properties?

- Which test management documents must be drawn up and what content must they cover?
- Which processes are available for monitoring progress and for risk-oriented testing?

Test analyst and technical test analyst

Advanced Level now distinguishes between four different categories of test procedures: specification- and structure-oriented and error- and experience-based techniques.

Advanced Level takes its greatest step forward, however, by drawing a clear line between functionally and technically aligned test analyses. While the former concentrate on specification-oriented and on error- and experience-based test procedures, the technical test analyst is acquainted with all test procedures except for a few special specification-oriented

techniques.

In addition, the new syllabus offers the following new content:

- Testing of quality characteristics as defined by ISO 9126, such as functionality, reliability or maintainability
- Additional review procedures: management reviews and audits
- Additional error management procedures
- Adopting additional process standards with a focus on improving test processes
- New procedures for automating testing
- New types of tool for automating testing
- Recommendations for the industrialisation of testing processes

Practically oriented

The Advanced Level Certified Tester in its new

form has developed into practical training that covers the specific, day-to-day requirements of industry. Its new and clearly defined coverage of the different work areas of testing is oriented to the development that commercial software quality assurance has undergone in recent years. The separate view of functional and technical testing in particular fulfils to the highest degree the requirements of software projects today.

Now that this experience and these best practices have been incorporated into an international standard the new-look training boosts the status of testing activity in general and thereby takes software testing further toward the standing of a profession for highly qualified specialists. In this way it is not just the software industry that will benefit from testers who are more professional and more practice-oriented in their approach. Conversely, software testers who have undergone this training can look forward to further and more highly qualified career paths.

The new Advanced Level – Key data

When does it happen?

The first course providers in Germany are already holding seminars based on the new Advanced Level. By September 2009 all course providers must have fully converted their seminars to the new syllabus and completed their re-accreditation. From September 2009 all ISTQB® Certified Tester Advanced Level examinations will be based on the new syllabus.

What does the exam look like?

The individual test manager, test analyst and technical test analyst modules are taught and examined separately. All examinations are based on multiple-choice test format.

What preconditions must be fulfilled?

To sit the exam you must already hold the Certified Tester Foundation Level certificate and have at least 18 months of career experience as a software tester.

Do existing certificates retain their validity?

Advanced Level certificates issued on the basis of the old syllabus retain their validity. Holders of these certificates are naturally required to learn the new and expanded content of the 2007 syllabus.

How long do the training courses take?

For the new Advanced Level the duration of seminars has increased from three to five days per module (such as test manager) because the training covers much more content and includes a significantly higher share of practical work

Why do seminars for the new ISTQB® Certified Tester Advanced Level take five days instead of three days as hitherto?

There are two main reasons:

- 1) First, the course content has been increased considerably. In the scope and depth of what is taught, the new Advanced Level has become a fully-fledged training qualification for an advanced tester with different focal points.
- 2) Second, training courses are now even more practical in orientation. Course content is more strongly oriented toward everyday project scenarios, and the number of practical exercises has increased significantly. Theory and practice now each account for roughly half the time spent training. All of this is only feasible if training is given over a longer period.

Why are there three different course specialisations at the new Advanced Level?

Especially as a more highly qualified activity, the tester per se virtually no longer exists. In recent years his work has extended to different specialisations. The old Advanced Level syllabus already made a clear distinction between test management and functional testing. In addition, the tasks that face many IT projects require technically oriented testing specialists – for the technical integration of test environments, for example. ISTQB® training now caters for this demand, which mainly comes from business. It distinguishes between three roles, those of the test manager, the test analyst and the technical test analyst.

Does the expansion of course content not jeopardise the standardisation of certified tester training?

Quite the reverse. A wider range of experience and best practices from more countries than ever before has found its way into the new syllabus. The ISTQB® and national boards such as the GTB have harmonised and standardised these different approaches in years of work with the result that today's new ISTQB® Certified Tester Advanced Level is a standard that can be used better internationally than ever before. It has become an ideal instrument for companies to simplify communication in cross-border IT projects.



Biography

Mario Winter is professor at the Faculty of Computer Science and Engineering Science of Cologne University of Applied Sciences, and a member of the Software Quality Group. From 1983 to 1987, he was engaged in industrial and scientific software projects, and between 1994 and 2002, he was research fellow at the FernUniversität Hagen. Currently he is spokesman of the German Special Interest Group in Software Testing, Analysis, and Verification of the German Informatics Society (GI-TAV) and a founding member of the German Testing Board (GTB). His teaching and research focus is on software development and project management, especially on the model-based development and quality assurance of software.

Quality, a vain quest in Crisis Times?

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