Foundation Course in STB & PVR Software Testing

A Solid Grounding in the Fundamentals of Set Top Box Testing

Introduction

Effective product testing is vital in today's competitive markets.

Effective testing often depends more on the skills of the testers performing the testing than anything else. In an ideal world, it is the test process which should provide the foundation to deliver a consistent and dependable quality test service. However, many organisations have not reached that level of test process maturity. In practice test departments rely heavily on the experience and heroics of individual testers to deliver the test service. Investing in training for testers makes sound business sense to ensure effectiveness.

Training new testers is disruptive when experienced testers are taken away from their duties to deliver basic training. **That's where we can help.**

Our course will help maintain your test momentum by reducing the impact of training new and/or inexperienced test personnel. Your experienced testers will then continue with their testing activities whilst we bring new testers up to speed through delivering foundation training.

After attending this course, your newly-hired testers will be equipped with a solid grounding in the fundamentals of STB software testing and will be ready to receive more organisation-specific training in the workplace.

Benefits

Benefits of this course to your company are:

- Testers will undergo an accelerated ramp-up and become productive and effective testers more rapidly;
- Multiple testers can be trained simultaneously, enabling you to resource new projects more readily;
- Projects suffer less disruption because experienced testers are less hindered by a need to provide foundation-level training;
- Training is well defined and measurable and you have full visibility of the areas covered;
- Testers receive consistent training.

What You Will Learn

New testers will learn:

- The principles of testing and how to apply those principles to testing set top box software;
- What makes an effective set top box tester and how to become one;
- How to prepare test environments ready for testing;
- How to write clear, succinct and relevant test cases;
- How to run tests and record results;
- What a defect is and how to manage defects through the testing function;
- How testers can add value to the troubleshooting process;
- How to best communicate results pertaining to testing;
- Techniques to make testing more effective and efficient.

Interactive Breeze

Interactive Breeze

Who Should Attend

This is a foundation-level course in STB and PVR software testing. No technical knowledge or previous testing experience is required. Nor is any specific product or industry knowledge assumed.

The course is delivered by experienced testers who have spent several years testing STB software for a variety of organisations.

Course Content

All of our material has a pragmatic slant based on our experience of what works in practice. We deliver the material with the support of real examples and situations based on our extensive experience in STB testing. The course content is independent of any particular lifecycle approach or project management methodology.

An introduction to STB and PVR technology

The architecture of a set top box

- A general overview of STB hardware;
- A general overview of an STB software stack e.g. drivers, middleware, CA, applications;
- An overview of the various types of vendor and who does what (hardware, low level software, middleware, security, applications).

A general overview of content delivery and consumption

- Broadcast delivery. Scheduling and playout, encoding, multiplexing, modulation, transmission;
- DTH, Terrestrial, Cable, and IPTV infrastructures;
- Security.

The development and delivery chain for the STB product and where testing fits in

- An overview of a set top box delivery product delivery chain from factory to customer;
- The product and software lifecycle and the part testing plays: integration testing, acceptance testing, field trials;
- A walkthrough of 'typical' test cycles to set the context.

Common terminology and standards you will encounter

- Industry standards and terminology: MPEG, DVB, Conditional Access;
- STB usage terminology: zapping, code download, EPG, nVOD, PPV, VOD etc;
- STB hardware terminology: ports, connectors and internal hardware.

Writing and running tests

The principles of testing

- Objectives of testing. The reasons why we need to test and what we aim to achieve;
- Testing techniques: unit, alpha, beta, integration, white box, black box, exploratory, acceptance;
- An introduction to black box testing of STB and PVR software.

Preparations for testing

- Ensuring the test environment is fit for purpose;
- Monitoring the stability and consistency of the test environment during testing;
- Strategies in dynamic test environments.

How to write tests

- How to get started;
- A basic test case template;
- Guidelines for writing a test.

Running the tests

- The order of testing;
- Testing with and without documented scripts;
- How to handle tests which can't be run fully.

Recording test results

- How to unambiguously determine the result of a running a test;
- Recording clear facts. Measurements, observations and test conditions;
- Noting 'interesting' behaviour for other tests.

Defects and troubleshooting

All about defects

- A walkthrough of a defect lifecycle;
- What to record when raising a defect or updating an existing one;
- Associating defects with tests.

Troubleshooting

- Participating in a defect investigation;
- Understanding the objectives of a tester in assisting troubleshooting;
- Establishing repeatability of test results;
- Useful supporting information (documented test method, measurement method, debug traces etc);
- Exercising caution with developmental builds and development environments.

Effective testing

Testing techniques

- Smoke testing;
- Regression testing;
- Positive and negative testing;
- Boundary testing and corner cases;
- Stress and stability testing – accelerated and real time testing: pros, cons and pitfalls;
- Performance testing.

Making use of tools to support testing

- Transport stream analysis tools;
- IR blasters and automated test script tools;
- Defect databases.

Representative testing

- Using production hardware and configurations i.e. the same as that of your customers;
- Testing with different connectivity and hardware configurations (cables, ports, TVs);
- Using multiple STBs simultaneously – how many and why?

Efficiency and productivity techniques

- Sanity checking ahead of detailed testing. Finding the 'show stoppers';
- Using a trusted reference platform;
- Identifying test chains for greater efficiency.

Surviving as a tester

Guidance in communication

- Communicating test information (results etc) appropriately. Consider the audience, the timing, the effect it may have;
- Communicating the right level of detail and taking care when communicating;
- Being aware of relationships and politics amongst parties with a vested interest in test outcomes.

Understanding the characteristics of a successful STB software tester

- How to remain clinical and logical in your testing and outlook;
- Being inquisitive. A knack for breaking things is good!
- How to acquire knowledge about the domain, the product and your organisation's working practices.

Self improvement: Ways you can increase your value as a tester

- How to become knowledgeable on specific product or test areas. E.g. VOD, EPG, security;
- Realising the bigger picture beyond the test department;
- Improving the test process.

Enrolment

Courses can be run either at your premises or at one of our training locations. For enrolment information please contact us on **+44 203 287 6197** or email **courses@interactivebreeze.com**.