

TECHNOLOGY TRANSFER PRESENTS

# RANDY RICE

---

**TESTING  
COMPLEX AND  
UNDOCUMENTED  
LEGACY SYSTEMS**

---

**JUNE 18-20, 2012**

---

---

**PRACTICAL  
SOFTWARE TEST  
AUTOMATION**

---

**JUNE 21-22, 2012**

---

VISCONTI PALACE HOTEL - VIA FEDERICO CESI, 37  
ROME (ITALY)



info@technologytransfer.it  
www.technologytransfer.it

# TESTING COMPLEX AND UNDOCUMENTED LEGACY SYSTEMS

## ABOUT THIS SEMINAR

Dirty Systems are those that are complex, undocumented and have unknown defect levels and architecture. These are challenging systems to maintain and test because over time they grow old and fragile.

In this course, based on the book by Randall W. Rice and William E. Perry of the same title, you will learn a process for how to gain understanding of a Dirty System, plan and design effective tests, and ultimately improve or clean the system based on what is learned in testing.

*Testing Dirty Systems* is based on a six-step process that takes from software discovery through test planning and design, test execution, test analysis and reporting, and finally, clean-up. You will leave with knowledge of how tools can help you understand and test Dirty Systems and how to deal with special testing challenges in dirty systems.

### WHO SHOULD ATTEND

- Test analysts
- Testers
- Developers
- Test Managers
- Development Managers

### RETURN ON INVESTMENT

- Learn how to improve Dirty Systems and reduce the total cost of maintenance and the risk of failures
- Learn how to find costly and embarrassing problems before your customers find them
- Understand the key issues in testing Dirty Systems
- Learn how to design tests that adequately cover undocumented requirements and Business events
- Advance your career by reinforcing your testing expertise

**Please, bring your laptop to the seminar.**



The delegates will also receive a copy of the book  
**“Testing Dirty Systems”**  
by Randy Rice.

## 1. Introduction to Testing Dirty Systems

- What is a “Dirty System?”
- The Dirty System Challenge
- General Testing Concerns
- Application Testing Concerns
- Operational Testing Concerns

## 2. A Process for Testing Dirty Systems

- The Deming Workbench Model
- The Software Life Cycle
- Test Terminology
  - Software Testing
  - Quality Assurance
  - Quality Control
  - Verification
  - Validation
  - Defect
  - Requirement
  - Static Testing
  - Dynamic Testing
  - Black Box (Functional) Testing
  - White Box (Structural) Testing
  - When Testing Occurs - “V” Diagram
  - A Comparison of Project Methodologies and Where Testing is Performed
    - \* Waterfall
    - \* Rapid Application Development
    - \* Rational Unified Process
    - \* Spiral Model
    - \* Extreme Programming
    - \* Commercial Off-the-shelf Applications
  - Process Maturity and the Capability Maturity Model

## 3. The Economics of Testing

- Where Defects Originate
- Where Testing Resources are Used
- The Relative Cost of Fixing Defects

## 4. Basic Test Planning

- Basic Testing Principles
- The Basic Testing Process
- What is a Test Strategy?
- The Components and Format of a Test Strategy
- Identifying Critical Success Factors
- Defining Test Objectives
- The Components and Format of a System-level Test Plan
- Major Elements of a Test Plan
- How Much Time Should be Spent on Test Planning?
- Planning Time Guidelines
- Tips for Test Planning

## 5. The Test Planning Process

- Key Test Planning Components
- Major Test Planning Tasks
  - Task 1 - Develop Test Strategy
  - Task 2 - Define Test Objectives
  - Task 3 - Identify Needed Test Resources
  - Task 4 - Plan Test Environment
  - Task 5 - Define Test Procedures
  - Task 6 - Identify Functions To Be Tested
  - Task 7 - Identify Interfaces With Other Systems or Components
  - Task 8 - Write Test Scripts
  - Task 9 - Define Test Cases
  - Task 10 - Design Test Data
  - Task 11 - Build Test Matrix

- Task 12 - Determine Test Schedules
- Task 13 - Assemble Information
- Task 14 - Finalize the Plan

## 6. Test Case Development

- Key Test Planning Components
- Test Scripts
- Test Cases
- How to Document Test Cases
- Types of Test Cases
  - Functional Test Cases - Boundary Value Analysis
  - Functional Test Cases - Equivalence Cases
  - Functional Test Cases - Requirements-based Cases
  - Decision Tables
  - Orthogonal Arrays
  - Functional Test Cases - Error Guessing
  - Functional Test Cases - Business-oriented Cases
  - Transaction Threads Based on Business Scenarios
- Test/Cycle Matrix
  - What is a Test Cycle?
  - Why Use Test Cycles?
  - Traditional Test Cycle
- Use Cases
  - Use Case Components
- Structural Test Cases - Logic-based
- Structural Test Coverage Levels
- Structural Test Cases – Behavioral
- Regression Test Cases

## 7. Unit Testing

- What is Unit Testing?
- When is Unit Testing Performed?
- How Much Preparation is Necessary?

- Why Create a Unit Test Plan?
- Unit Test Case Design - Functional Tests
- Unit Test Case Design - Structural Tests
- The Unit Test Process
- How to Document Functional Unit Test Cases
- How to Design Structural Tests
- How to Document Unit Interfaces
- Example: Unit Test Overview
- Unit Test Execution - Procedural Software
- Unit Test Execution - Event-driven Software
- Unit Test Execution - Case-developed Software
- Automated Methods for Unit Testing
- Unit Test Tools
- Manual Methods of Unit Testing
- Unit Test Defect Reporting
- Unit Test Summary Report
- Example: Unit Test Summary Report

## 8. System Testing

- What is System Testing?
- System Test Planning
- Identifying System Test Objectives
- Identifying System Functions to Test
- Example: System Function Worksheet
- Identifying Critical Requirements
- Example: Critical Requirements Worksheet
- Identifying System Interfaces
- Example: System Interface Worksheet
- Profiling for Performance Testing

- Example: System Performance Profile Worksheet
- Building the System Test Matrix
- Example: System Test Matrix
- Identifying System Test Schedules and Resources
- Example: System Test Schedule
- Finalizing the System Test Plan
- A Representative System Test Plan Outline

## 9. User Acceptance Testing

- User Acceptance Testing
- What is User Acceptance Testing?
- Methods of User Acceptance Testing
- The User's Role in Testing
- An Overview of the Structured User Acceptance Testing Process
- Definitions
- The Structured User Acceptance Testing Process
  - Phase 1 - Plan Tests
  - Phase 2 - Execute Tests
  - Phase 3 - Evaluate Tests
- Setting Acceptance Test Objectives
- Organizational responsibilities
- Defining Acceptance Criteria
- Recording of Test Results
- Phase 2 - Execute Tests
  - Step 1 - Select tools
  - Step 2 - Train team members
  - Step 3 - Execute test plan
  - Step 4 - Track progress
  - Step 5 - Perform regression testing
  - Step 6 - Document test results
- Manual Methods
- Automated Methods
- Pitfalls to Avoid
- Managing Attitudes and Conflict

- Phase 3 - Evaluate Tests
  - Step 1 - Record Defects
  - Step 2 - Perform Data Reduction
  - Step 3 - Develop Findings and Recommendations
  - Step 4 - Formalize Test Report

## 10. Test Cases From Use Cases

- What is a Use Case?
- Use Case Components
- Use Case Model
- Sample Use Case
- Translating Use Cases into Test Cases
- Test Cases and Test Scripts
- Sample Test Cases Derived From Use Cases
- The Process

## 11. Test Execution Strategies

- Automated Testing
- Risks of Not Automating Testing
- Risks of Automating Testing
- Where Do Tools Fit In?
- The Major Issues
- "Top 10" Test Tools
- Critical Success Factors
- Test Execution - Manual Methods
- Test Folders
- Test/Function Matrix
- Building the Test Environment
- How to Create and Maintain Test Data
- Test Data Cycle
- The Process for Configuration/Release Management
- Pitfalls to Avoid

## 12. Regression Testing

- What is Regression Testing?
- No Regression Testing: Hidden Defects
- Regression Testing: No Hidden Defects
- Regression Testing - The Process
- Regression Testing - What's Needed?
- Regression Testing Issues
- Regression Testing - How Much is Enough?
- Tips for Performing Regression Testing

## 13. Test Tools

- What is a Test Tool?
- The Risks of Not Automating Testing
- The Risks of Automating Testing
- Where Do Tools Fit In?
- The Major Issues
- The Top 10 Test Tools
- Interactive Test/Debug
- Capture/Playback
- File and Code Comparison
- Stress and Load Testing
- Defect Tracking
- Test Data Generators
- Test Management
- Complexity Analyzers
- Coverage Analyzers
- Checklists
- Steps in Selecting a Test Tool
- Critical Success Factors

## 14. Walkthroughs and Inspections

- Introduction to the Inspection Process
- Planning

- Performance
- Follow-up
- Roles and Responsibilities
- Keys to Success
- Exercise (.5 hrs.)

## 15. Test Evaluation and Reporting

- Prerequisites for Test Evaluation
- Test Evaluation and Reporting Process
- Test Reporting Attributes
- Types of Test Reporting
  - Defect reports
  - Status reports
  - Final report
- System Test Evaluation - Defect Reporting
  - Paper-based
  - Defect tracking tools
  - The role of the defect administrator
- The Defect Life Cycle
- Defect Tracking - Things You Need to Know
  - What is a defect?
  - How is a defect reported?
  - What are the defect categories?
  - How much detail should be reported?
  - What does the tester do when the defect is fixed?
- Sample Defect Categories
- Sample Defect Priorities
- Status Reporting
- Final Reporting
- Test Summary Report
- How Can This Data be Used?

## 16. Test Project Management

- Keeping the Test on Track
- Facts About Change
- Dealing with Change During Testing
- Ways to Deal with Change
- The Sources of Change
- Six Tips for Dealing With Change During Testing
- Levels of Change Severity
- How to Estimate Test Time
  - Ratios
  - Comparison to Scope Baseline
  - Historical Models
  - Defect Prediction Models
  - Time Boxes
  - Testware
- How to Track Progress

## ABOUT THIS SEMINAR

This course focuses on the basics of software Test Automation and expands on those topics to learn some of the deeper issues of Test Automation. This course is not specific to any particular tool set but does include hands-on exercises using free and cheap test tools.

The main objective of this course is to help you understand the landscape of software Test Automation and how to make Test Automation a reality in your organization. You will learn the top challenges of Test Automation and which approaches are the best ones for your situation, how to establish your own Test Automation organization, and how to design software with Test Automation in mind. You will also learn many of the lessons of Test Automation by performing exercises using sample Test Automation tools on sample applications.

You will leave the course with your own Test Automation strategy and plan for implementing it.

### WHO SHOULD ATTEND

- Software Testers
- Test Analysts
- Test Designers
- Test Automators
- Test Managers and Leaders
- Software Developers

### WHAT YOU WILL LEARN

- The purpose and value of automating software tests
- The common challenges and pitfalls of Test Automation and how to overcome them
- How to automate structural Testing
- How to automate functional Testing with modern approaches
- How Test Automation frameworks can be used to streamline Test Automation
- How to design tests that can be readily automated
- The deeper issues of creating Test Automation
- The Test Automation tools on the market
- Which tools are free or inexpensive
- How to make Test Automation a reality in your organization
- How to measure the benefits and value of Test Automation

## OUTLINE

<p><b>1. Understanding Test Automation (1 hr.)</b></p> <ul style="list-style-type: none"><li>• The relationship between test tools and Test Automation</li><li>• The promise and value of Test Automation</li><li>• Common measures and metrics for Test Automation</li><li>• Examples of implementing Test Automation</li><li>• Critical success factors for Test Automation</li></ul> <p><b>2. Surviving the Top Ten Challenges of Software Test Automation (1.5 hrs.)</b></p> <ul style="list-style-type: none"><li>• The Top Ten Challenges<ul style="list-style-type: none"><li>- Human-related</li><li>- Process-related</li><li>- Technical</li></ul></li><li>• How to overcome the challenges</li><li>• Case Study and exercise</li></ul> <p><b>3. Structural Test Automation (1 hr.)</b></p> <ul style="list-style-type: none"><li>• The role of structural Test Automation tools</li><li>• How structural Test Automation tools work</li><li>• Case Study and exercises</li></ul> <p><b>4. Functional Test Approaches (1.5 hrs.)</b></p> <ul style="list-style-type: none"><li>• The role of functional Test Automation tools</li><li>• Common Test Automation approaches<ul style="list-style-type: none"><li>- Capture/playback</li><li>- Scripting</li><li>- Keyword or component-driven</li></ul></li><li>• Case Study and exercises</li></ul>	<p><b>5. Building a Framework for Test Automation (2 hrs.)</b></p> <ul style="list-style-type: none"><li>• What is a Test Automation framework?</li><li>• Why a framework is needed</li><li>• Test process integration</li><li>• Integration with other types of test tools</li><li>• Case Study and exercises</li></ul> <p><b>6. A Process for Acquiring and Implementing Test Automation Tools (1.5 hrs.)</b></p> <ul style="list-style-type: none"><li>• Acquiring Test Automation tools<ul style="list-style-type: none"><li>- Process overview</li><li>- Steps in the process</li><li>- What is required for the process</li><li>- How to implement the process</li></ul></li><li>• Implementing Test Automation tools<ul style="list-style-type: none"><li>- Process overview</li><li>- Steps in the process</li><li>- What is required for the process</li><li>- How to implement the process</li></ul></li><li>• Case Study and exercises</li></ul> <p><b>7. Deconstructing Test Automation (3 hrs.)</b></p> <ul style="list-style-type: none"><li>• Diving deeper into capture/playback<ul style="list-style-type: none"><li>- Automating a simple test</li><li>- Modifying the script</li></ul></li><li>• Diving deeper into test scripting<ul style="list-style-type: none"><li>- Automating a simple test by writing a script</li></ul></li><li>• Diving deeper into component and keyword-based testing<ul style="list-style-type: none"><li>- Building a small set of automated test components</li><li>- Assembling the components into a test</li></ul></li><li>• Case Study and exercises</li></ul>	<p><b>8. Managing Test Automation (1.5 hrs.)</b></p> <ul style="list-style-type: none"><li>• Why testware management is needed<ul style="list-style-type: none"><li>- Configuration Management for testware</li><li>- Establishing and maintaining traceability</li><li>- Measuring testware</li></ul></li><li>• The role of test management tools</li><li>• Case Study and exercises</li></ul> <p><b>9. Cheap and Free Test Tools</b></p> <ul style="list-style-type: none"><li>• The issues behind “free” tools</li><li>• Helpful and effective Open-Source tools</li><li>• Lesser expensive Test Automation tools</li></ul> <p><b>10. How to Make Test Automation a Reality in Your Organization</b></p> <ul style="list-style-type: none"><li>• Assessing your organizational maturity</li><li>• Which skills are needed</li><li>• Integrating processes, tools and people</li><li>• Viewing Test Automation as an ongoing project</li><li>• Measuring the benefits and value of Test Automation</li></ul> <p><b>11. Summary (.25 hr.)</b></p> <ul style="list-style-type: none"><li>• Top ten course points</li><li>• Final questions and answers</li></ul>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

# INFORMATION

<p><b>PARTICIPATION FEE</b></p> <p><b>Testing Complex and Undocumented Legacy Systems</b> € 1600</p> <p><b>Practical Software Test Automation</b> € 1200</p> <p><b>Special price for the delegates who attend both seminars</b> <b>€ 2600</b></p> <p>The fee includes all seminar documentation, luncheon and coffee breaks.</p> <p><b>VENUE</b></p> <p>Visconti Palace Hotel Via Federico Cesi, 37 Rome (Italy)</p>	<p><b>SEMINAR TIMETABLE</b></p> <p>9.30 am - 1.00 pm 2.00 pm - 5.00 pm</p> <p><b>HOW TO REGISTER</b></p> <p>You must send the registration form with the receipt of the payment to: TECHNOLOGY TRANSFER S.r.l. Piazza Cavour, 3 - 00193 Rome (Italy) Fax +39-06-6871102</p> <p><b>within</b> <b>May 4, 2012</b></p> <p><b>PAYMENT</b></p> <p>Wire transfer to: Technology Transfer S.r.l. Banca: Cariparma Agenzia 1 di Roma IBAN Code: IT 03 W 06230 03202 000057031348 BIC/SWIFT: CRPPIT2P546</p>	<p><b>GENERAL CONDITIONS</b></p> <p><b>GROUP DISCOUNT</b> If a company registers 5 participants to the same seminar, it will pay only for 4. Those who benefit of this discount are not entitled to other discounts for the same seminar.</p> <p><b>EARLY REGISTRATION</b> The participants who will register 30 days before the seminar are entitled to a 5% discount.</p> <p><b>CANCELLATION POLICY</b> A full refund is given for any cancellation received more than 15 days before the seminar starts. Cancellations less than 15 days prior the event are liable for 50% of the fee. Cancellations less than one week prior to the event date will be liable for the full fee.</p> <p><b>CANCELLATION LIABILITY</b> In the case of cancellation of an event for any reason, Technology Transfer's liability is limited to the return of the registration fee only.</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## RANDY RICE

**TESTING COMPLEX AND UNDOCUMENTED LEGACY SYSTEMS**

Rome June 18-20, 2012  
Visconti Palace Hotel - Via Federico Cesi, 37  
Registration fee: € 1600

**PRACTICAL SOFTWARE TEST AUTOMATION**

Rome June 21-22, 2012  
Visconti Palace Hotel - Via Federico Cesi, 37  
Registration fee: € 1200

**BOTH SEMINARS**

**Special price for the delegates who attend both seminars: € 2600**

If anyone registered is unable to attend, or in case of cancellation of the seminar, the general conditions mentioned before are applicable.

first name .....

surname .....

job title .....

organisation .....

address .....

postcode .....

city .....

country .....

telephone .....

fax .....

e-mail .....



Stamp and signature

Send your registration form with the receipt of the payment to:  
**Technology Transfer S.r.l.**  
Piazza Cavour, 3 - 00193 Rome (Italy)  
Tel. +39-06-6832227 - Fax +39-06-6871102  
info@technologytransfer.it  
www.technologytransfer.it



## SPEAKER

**Randy Rice** is a leading author, speaker and consultant in the field of software Testing and software quality. Mr. Rice, a Certified Software Quality Analyst, Certified Software Tester, Certified Software Test Manager and an ASTQB Certified Tester – Foundation Level (CTFL), has worked with organizations worldwide to improve the quality of their information systems and optimize their Testing processes. Mr. Rice has over 29 years experience building and Testing mission-critical projects in a variety of environments. He is a member of the American Software Testing Qualifications Board and has been published by *the Journal of the Quality Assurance Institute*, *Crosstalk*, *Client/Server Computing*, *Powersoft Applications Developer* and *Enterprise Systems Journal*. He is a regular speaker at international conferences on software testing in North America and Europe, and is also publisher of *The Software Quality Advisor*. He is co-author with William E. Perry of the books, “**Surviving the Top Ten Challenges of Software Testing**” and “**Testing Dirty Systems published**” by Dorset House Publishing Co. Mr. Rice served as chair of the Quality Assurance Institute’s International Software Testing Conference from 1995 – 2000 and was a founding member of the Certified Software Test Engineer (CSTE) certification program. As author and trainer of many software testing training courses, he has had the privilege of training thousands of software testers throughout North America. He is a frequent speaker at major testing conferences, including EuroStar, StarEast, StarWest, QAI’s International Software Testing Conference, Practical Software Quality Techniques, and the Software Technology Conference sponsored by the U.S. Dept. of Defense. He was a judge for the 2005 Codie awards for excellence in software Testing tools. He also serves on the board of directors for the American Software Testing Qualifications Board (ASTQB).