

# 02

February 2003

# THE TESTER

- **Test Monkeys:  
The New Members  
of Your Team**
- **Essential  
Performance Testing  
- Gathering Speed**
- **Challenges of  
Testing UML Based  
Systems**
- **Get Your Message  
Across - Reporting for  
Maximum Impact**
- **Testing Change at  
Legal & General**
- **In at the Deep End  
from DBA to Load  
Tester**

N E X T   C O N F E R E N C E

## The Fellowship of the Test

Tuesday 11 February 2003

## FUTURE

SIGiST CONFERENCES

Thursday 15 **May** 2003

Thursday 10 **July** 2003

Thursday 18 **September** 2003

Tuesday 9 **December** 2003





## FROM THE EDITOR

I hope that you are now recovering from the excesses of Christmas and are looking forward to whatever challenges that 2003 is going to bring!

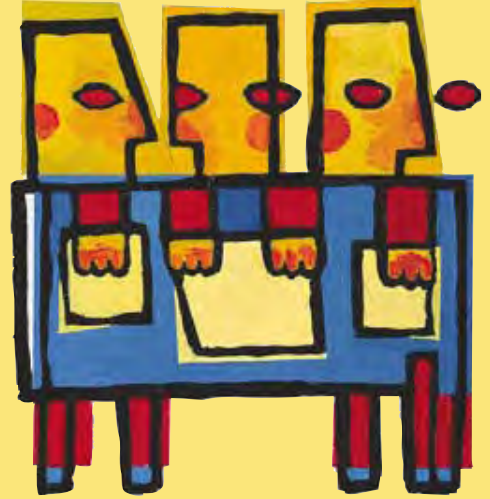
I noticed, looking at our web-site recently, that although Paul Gerrard worked very hard at the September meeting to encourage you all to make use of the Forum, this has had little effect!

I hope that you do visit the SIGiST web-site from time to time. There is a wealth of information on there, and in future we will be including more information about future speakers and their papers etc. If you have further ideas on what you would like to see, then Hugh Brodie is the man to speak to.

Also if you have preferences on what you would like to see in our new format of The Tester then please let me know. I usually include an article or two, but we are more restricted on space with details of the next meeting, forthcoming speakers etc.

All of us on the committee pass on to you our very best wishes for the New Year and hope that 2003 will be a happy and prosperous one!

Pam Frederiksen  
Communications Secretary  
Tel: **01483 881 188** (Leysen Associates)  
Fax: **01483 881 189**  
email: [pam@leysen.com](mailto:pam@leysen.com)  
BCS SIGiST web-site: [www.sigist.org.uk](http://www.sigist.org.uk)



### AGENDA

08.45 **Coffee & Registration, Exhibition opens**

09.25 **Introduction and Welcome**

Barbara Eastman, Chair

09.30 **John Fodeh**

B-K Medical

*Test Monkeys: The New Members of Your Team?*

10.30 **Coffee & opportunity to visit the exhibition**

11.00 **Julian Harty**

Commercetest Limited

*Essential Performance Testing – Gathering Speed*

11.45 **Richard Warden**

Software Futures Limited

*Challenges of Testing UML Based Systems*

12.30 **Networking session and commercial break**

12.45 **SIGiST Best Presentation 2002 Award**

12.50 **Lunch & opportunity to visit the exhibition**

14.00 **Book Review**

14.10 **Isabel Evans**

IE Testing Consultancy Limited

*Get Your Message Across – Reporting for maximum impact*

14.55 **Tea & opportunity to visit the exhibition**

15.25 **Geoff Thompson**

Legal & General Assurance Society Limited

*Testing Change at Legal & General*

16.10 **Paul Down**

Embarcadero Europe

*In at the deep-end: from DBA to load tester*

16.50 **Closing Remarks**

The SIGiST committee reserves the right to amend the programme if circumstances deem it necessary.

### TO REGISTER ON THE SIGiST DATABASE

If you wish to receive information about future SIGiST meetings please contact:

Claire Mason at SIGiST Registrations and Admin

**Tel: 01422 836 431 Fax: 01422 839 472**

**Email: [SIGiSTregs@aol.com](mailto:SIGiSTregs@aol.com)**

Please note that any views expressed in this Newsletter are not necessarily those of the BCS.

# The Fellowship of the Test

BCS SIGiST - Tuesday 11 February 2003

London Marriott Hotel,  
Grosvenor Square, London W1



**Julian Harty,**  
Commercetest Limited  
**Essential Performance  
Testing – Gathering Speed**

## Abstract:

Few testers have time for performance testing; therefore performance goes unmeasured. As users only want two things from computer systems – responsiveness and predictability – these testers are letting the users down. Basic performance testing isn't hard and significant gains are possible in many systems without spending too much time or money. The aim of this presentation is to enable testers to get started with performance testing quickly, and at low cost.

This talk presents three facets of performance, as viewed by the end-user, the business and IT.

The presentation introduces several techniques for effective automation of performance tests, and covers some of the most common pitfalls.

Performance testing generally has to cope with the fact that the end system will include some factors outside the direct control of the system e.g. dial-up connections, performance of the Internet backbone, etc. Testers need ways to factor these issues into their testing so that they can test 'fitness-for-purpose' without losing control of the end results.

Performance testing results help drive further improvements, both for the product and for us. Also, simple techniques mean significant results can be obtained quickly so there is little or no excuse for not including some performance testing on your next project.

## Biography:

Julian started his career in electronics with the RAF in 1980 before moving to business services giant Dun & Bradstreet Corporation in 1987. Working in the Advanced Research and Development Group, Julian was responsible for design, development, implementation and operation of the main e-business system for Europe, the Middle East and Africa. In 1998, Julian joined Infobank, where he was responsible for developing, implementing, and testing the company's e-procurement system, ensuring that it would work for large-scale clients. During 2002 he was also technical director of a telephony services company and of a specialist Internet software development group.

Julian now runs Commercetest, a company he founded in 1999. Commercetest is a specialist independent company at the forefront of delivering reliable e-business systems through the review, test, fault analysis and repair of e-business infrastructure. Julian is also an occasional speaker and

trainer on topics ranging from e-procurement to hands-on performance testing and as a member of the BCS performance testing working party; a team that is responsible for developing the formal standard on non-functional testing techniques.

**Richard Warden,** Software Futures Limited

## Challenges of Testing UML Based Systems

### Abstract:

Unified Modelling Language (UML) is a rich language that can describe the behaviour and functions of an IT system in many ways and enable a tester to develop a very comprehensive view of how a system should function. The tester can then develop wide, varied and demanding test suites to support the objective of maximum test coverage with the minimum of resources.

However, UML is relatively new; it was created primarily for developers and little thought was given about testing. As it is more widely adopted organisations face the challenge of developing a UML testing capability. This presentation introduces the major topics that testers need to consider. Discussion of the topics is based partly on case studies and partly on developing techniques and training.

### Biography:

Richard Warden has been an independent IT consultant for the last 11 years after starting his company Software Futures Ltd ([www.softwarefutures.ltd.uk](http://www.softwarefutures.ltd.uk)) in 1991. For the last five years he has worked extensively on UML testing problems starting with projects for the Swiss Stock Exchange in 1997. The Exchange was developing two new trading platforms using UML and needed to work out both overall strategy and detailed test planning and implementation techniques for these projects. Following this Richard worked as an associate with Sema4 Europe, an object technology company, developing consultancy and training for UML testing and delivering them their clients. The training development is performed in collaboration with Isabel Evans, of IE Testing Consultancy Ltd. This work is ongoing see [www.ietesting.co.uk](http://www.ietesting.co.uk).

In terms of personal history Richard wrote his first computer program in 1970, and it is still Millennium compliant! His 27 years IT experience encompasses work as an RAF officer, as a development analyst, designer, programmer and tester on mainframe defence support systems, to RACAL electronics where he worked on mini and micro based business systems, as a CAD systems development project manager and then as quality manager for the company. He then worked for K3 Group on client-server systems in financial applications before gaining his independence.



# SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

NEXT CONFERENCE:

## The Fellowship of the Test

Tuesday 11 February 2003

London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

### REGISTRATION FORM

You may register by

**Fax** 01422 836 096 or 01422 839 472

**Post** SIGiST Conference Registration,  
Marshwood Events Management,  
P O Box 445, Triangle, HX6 3YF.

**Tel** 01422 836 431

**Email** SIGiSTregs@aol.com (giving all details required below)

Title \_\_\_\_\_

First Name \_\_\_\_\_

Family Name \_\_\_\_\_

Invoice and Joining Instructions to be sent to  
(please include company name)

Company \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If you haven't heard from us by 4 February,  
please contact us on 01422 836 431

Tel \_\_\_\_\_

Fax \_\_\_\_\_

Email \_\_\_\_\_

If you are a SIGiST member, BCS corporate, individual or  
affiliated member please state which and quote your  
membership number.  
\_\_\_\_\_

**NOT-FOR-PROFIT FEES** include morning coffee, afternoon  
refreshments, 3 course luncheon, full set of presentation  
materials and entry into the tools and services exhibition.

	Ex Vat	Inc VAT
Members	£120.00	£141.00
Non-Members	£150.00	£176.25
Full Time Students *	£35.00	£41.13
Academics & those returning to work **	£70.00	£82.25

\* please include copy of student ID

\*\* available once in any 12 month period  
(VAT @ 17.5%)

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By cheque made payable to '**BCS SPECIALIST INTEREST  
GROUP IN SOFTWARE TESTING**', by bank transfer  
(await details on invoice) or by credit card

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 Cheque enclosed

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Issue number (Switch only) \_\_\_\_\_

Card Number \_\_\_\_\_

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Billing address if different from first column:  
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Signature \_\_\_\_\_

Date \_\_\_\_\_

### PURCHASE ORDERS

Does your company use Purchase Orders?  Yes     No

If so, please put the Purchase Order number here so that  
we can process your registration more quickly. If you tick  
the box above but do not know the Purchase Order Number  
we shall wait until we have one before processing.

Purchase Order No: \_\_\_\_\_

### CANCELLATIONS

Cancellations must be received in writing prior to  
4 February to qualify for refund of fees (less £10.00  
administration charge). No-shows are liable for the  
full cost of fees. Substitutions may be accepted at  
anytime. Please note that no provisional registrations  
can be accepted.

### VEGETARIAN MEALS / SPECIAL DIETARY REQUIREMENTS

I am a vegetarian     Allergies \_\_\_\_\_

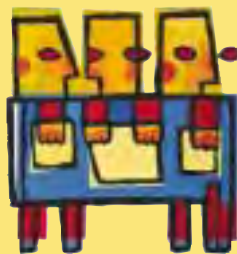
Please tick this box if you DO wish to give permission  
for your name and address to be passed to a third party  
for mailings on related matters.

In the unlikely event of conference cancellation, our liability  
will be limited to the refund of fees.

**CPD** The meeting is worth 5 hours CPD  
(Continuous Professional Development)

VAT Reg No GB 618 1687 24

# What is the SIGiST ?



THE SIGiST is the Specialist Interest Group in Software Testing. We are the largest of the specialist interest groups in the British Computer Society.

The mission of the Group is:

*'To be the leading forum for promoting excellence in systems and software testing.'*

The objectives of the Group are:

- To promote the importance of software testing.
- To develop awareness of industry's best practices in software testing.
- To represent the interests of the Group's members with other bodies.

- To encourage research into software testing.
- To promote and develop high standards and professionalism in software testing.

With over 2000 members we are effectively the largest independent team of testers in the UK! We run one day conferences 5 times a year at the prestigious London Marriott Hotel, Grosvenor Square, London. Some of the conferences are themed days and others cover a diverse range of testing topics. Listen to key note speakers from around the world and share experiences and problems with fellow professionals, whatever your background. We also run exhibitions of test tool and service suppliers at our conferences.

Our sub-group has produced a standard on software component testing, copyright of which has now been assigned to the BSI (British Standards Institute) for acceptance as a British Standard. The group is now working on standards for non-functional testing.

Membership of the SIGiST is free and as well as conference discounts it entitles you to access our full library of testing-related material at [www.sigist.org.uk/library.shtm](http://www.sigist.org.uk/library.shtm). Books, papers and videos are available for browsing or loan, free of charge to members. See [www.sigist.org.uk](http://www.sigist.org.uk) to join – regardless, we hope to see you at our next conference!

## Abstract & biography



**Geoff Thompson,**  
Legal & General Assurance Society

### Testing Change at Legal & General

#### Abstract:

In the middle of 2001 Legal & General Assurance Society embarked on a two-year programme with the objective of:

Reengineering the Legal & General Testing Infrastructure to reduce

elapsed time and costs, whilst improving the understanding of development risks and quality prior to Production.

By Infrastructure we mean the process, people, environment and tools, basically anything testing. Development activity has now completed, we are now beginning Pilot rollouts.

This presentation shows how we got the whole programme off the ground, and how we are going about achieving the objective, as well as a few of our success stories.

#### Biography:

Geoff has been working within the testing arena at Legal and General, a leading UK Life Assurance Company, for the past 10 years. He has been involved in some of the largest software

deliveries at Legal & General (Mainframe, Client Server, and e-Comm), as a Tester executor, Test analyst, Test Manager and Programme Manager. He is keen to understand and resolve the problems faced at the coal face and to that end was appointed Programme Manager for the development and the role out of the Legal & General wide Test Strategy (Process, Tools, Training, Environments, etc.).

Geoff has presented at and is an active member of the Special Interest Group in Software Testing (SIGiST) in the UK and is vice Chairman of the Information Systems Examination Board (ISEB) for Software Testing (part of the British Computer Society).





**John Fodeh**, B-K Medical

### Test Monkeys: The New Members of Your Team?

**Abstract:**

Most test automation approaches focus on regression testing - repeating the same sequence of actions on the software under test to reveal unexpected behaviour. Despite many advantages, this traditional approach has a number of limitations and often still misses serious defects in the software. Test Monkeys can help you fill the gap!

Monkey Testing refers to the process of randomly exercising a software program by means of an automated test tool. Unlike regression testing, test monkeys explore the software in a new way each time the test is run, consequently finding new defects. The test monkeys can be used early in the development process with low development and maintenance effort. Therefore, monkey testing provides a valuable supplement to the automated regression tests.

The presentation shows how you can use automatic random testing as a cost-effective tool for detecting errors and inspecting the stability of the software under test, thus adding great value to your automated test suite. The presentation presents the general concept, the pros and cons as well as experience-based examples of using monkey test tools.

**Biography:**

John A. Fodeh is a Test Manager at B-K Medical. He has 5 years of experience in the field of software testing, process improvement and test automation. He has also been a key person in a SPI project aiming at improving the release decision basis. He is an active member of a Danish special interest group in software testing. He has previously given presentations at a number of seminars and conferences including EuroSPI 2000 and EuroSTAR 2001 and EuroSTAR 2002. He holds a M.Sc. from the Technical University of Denmark and an ISEB foundation certificate in software Testing.

**Isabel Evans**, IE Testing Consultancy Limited

### Get Your Message Across – Reporting for maximum impact



**Abstract:**

“When managing testing we need to report progress (or a lack of it!). Our reports inform management and help in decision-making and risk assessment. We also need to provide our colleagues and teams with the information they need in order to understand progress and priorities. Do our reports add value for their audience or are we just supplying “*chart junk*” that will not be read? Are we providing teams and managers with information they need or just providing them with what we have? Do our reports and charts emphasise or hide our message? Are our reports clear and to the point or do they contain “*chart junk*”?”

This presentation discusses how best to put across our message clearly. It is based on the work of information designers such as Edward Tufte (who coined the phrase chart junk) and on the presenter’s experiences. We will discuss what types of information different audiences need, how to display information using charts, diagrams and text to best effect, and what reporting cycles are required for different audiences. We will discuss how to predict future progress from past reports.

**Biography:**

During Isabel Evans’ nearly 20 years in IT quality management and testing, she has developed testing procedures, standards and methods, managed test groups, and performed testing design and development. She has also provided Quality Assurance Support, Release Management, and Customer Support for IT organisations. Isabel provides services in Testing, Test Management, Training and Quality Consultancy, working independently since 1992. As well as presenting seminars and training courses to clients, Isabel has spoken on software quality, testing and test management at conferences in the UK and Europe, including EuroSTAR, Quality Forum, BCS SIGIST and the Year 2000 and EURO Summit. Isabel has been a member of various working parties for the Quality Forum, including the Testing Metrics Forum and the Customer Satisfaction Measurement working party. She is a member of the BCS SIGIST Test Standards Working Party, currently developing the non-functional testing standard.



**Paul Down**, Embarcadero Europe

### In at the Deep-End: from DBA to Load Tester

**Abstract:**

Testing has long been recognised as a highly technical and specialist area of IT. So what happens when you take a mainframe DBA and ask him to Support and Demo a new Web Load testing Solution to customers? The answer is an eventful and rewarding learning experience. This presentation will discuss the “*high’s*” and “*low’s*” of making this transition as well as outlining some of the latest terminology and Web load-testing practises.

**Biography:**

Paul is a Senior Consultant at Embarcadero Europe, a leading provider of software solutions that enable organisations to build, optimise and manage databases and applications supporting today’s critical enterprise systems. Paul brings more than 13 years of Enterprise and Distributed technical experience to Embarcadero, where he supports Embarcadero’s portfolio of Application and Database solutions. Paul has previously held roles spanning technical Architecture, Database Administration and Solutions Delivery. Prior to joining Embarcadero Europe, Paul was a Senior Consultant with Compuware Corporation, a provider of software products, services and solutions.

# 03

May 2003

# THE TESTER

- Risk Analysis and Test Strategy
- Test Tool Implementation
- Testing Both Ends of the Rainbow
- Govern IT – Testing Principles Within a Corporate and IT Governance Framework
- Risk Analysis and Test Strategy Workshop
- Language, Truth and Lobsters
- Test Estimation
- Test & Go

N E X T   C O N F E R E N C E

## The Habit (Or Testing It There and Back Again)

Thursday 15 May 2003

**FUTURE**  
SIGiST CONFERENCES

Thursday 10 July 2003

Thursday 18 September 2003

Tuesday 9 December 2003





## FROM THE EDITOR

We had a very full day at our conference in February, with six quality papers. In addition we had a presentation of a different kind, to Paul Gerrard for the SIGIST Best Presentation Award for 2002. He was rewarded with an engraved trophy for his paper 'What is the Value of Testing and How Can we Increase it?' given in December. Paul received the highest marks of the year (Keynote Speakers were excluded) from the evaluation sheets which are completed after each event. Many congratulations to Paul!

It's AGM time again! We welcome volunteers for the committee to assist in organising our conferences. We have decided to introduce a flat fee for future events, although we will continue to have reductions for students/ academics. The programme we are able to offer is still extremely good value compared to other similar events.

Have you ever used the library? We have books on display at each conference which you are able to borrow free of charge. Have a look at our web-site for more details on [www.sigist.org.uk](http://www.sigist.org.uk)

Hope we'll see you at the AGM. This is the opportunity to have an open discussion regarding the organisation of the SIGIST and we welcome your input!

Pam Frederiksen  
 Communications Secretary  
 Tel: **01483 881 188** (Leysen Associates)  
 Fax: **01483 881 189**  
 Email: [pam@leysen.com](mailto:pam@leysen.com)  
 BCS SIGIST web-site:  
[www.sigist.org.uk](http://www.sigist.org.uk)  
 SIGIST Standards Working Party:  
[www.testingstandards.co.uk](http://www.testingstandards.co.uk)

## BCS SIGiST – The Habit (Or Testing it There & Back Again)

London Marriott Hotel, Grosvenor Square, London W1 – Thursday 15 May 2003

08:30 **Coffee and Registration, Exhibition opens**

09:00 **SIGiST AGM**

09:25 **Introduction and Welcome - Barbara Eastman, Chair**

09:30 **Featured Speaker**

**Risk Analysis and Test Strategy.** Erik van Veenendaal, *Improve Quality Services Ltd.*  
 Author: "The Testing Practitioner"

10:15 **Coffee and opportunity to visit the exhibition**

10:45 **Case History:**

**Test Tool Implementation**

*Tony Carey – Cap Gemini*

*Ernst & Young Special Session*

**Special Session**

advanced booking required

**Risk Analysis and Test Strategy**

**Workshop – Erik van Veenendaal**

11:30 **Book Review**

11:45 **Testing Both Ends of the Rainbow – Chris Ambler, Newell & Budge Ltd.**

12:30 **Networking session and commercial break**

12:50 **Lunch and opportunity to visit the exhibition**

14:00 **Testing Tips**

14:15 **Govern IT – Testing Principles**

**Within a Corporate and IT**

**Governance Framework**

*Mike Smith, Testing Solutions Group*

**Vendor Presentation**

**Test & Go**

*Anna Dearlove*

*QualiControl (UK) Ltd.*

15:00 **Tea and opportunity to visit the exhibition**

15:30 **Language, Truth and Lobsters – Peter Morgan, Independent**

16:00 **Featured Speaker**

**Test Estimation – Erik van Veenendaal, Improve Quality Services Ltd.**

Author: "The Testing Practitioner"

16:45 **Closing Remarks**

The SIGiST committee reserves the right to amend the programme if circumstances deem it necessary.

## Annual General Meeting - 15 May 2003

This is to be held at the commencement of the May conference and the proceedings will include the election of the committee for the following year. The positions available are:

- Chair
- Vice-chair
- Treasurer
- Secretary
- Programme Secretaries
- Communications Secretary
- Marketing and Web site Secretary

If you feel that you may be interested in standing for nomination but are unsure as to exactly what the roles entail, please contact the Administration in the first instance and one of the existing committee will ring you to discuss the role(s). All positions are voluntary and members give freely of their time to organise and run the conferences.

**The AGM Agenda will be:**

1. Minutes of previous AGM and matters arising
2. Reports:
  - Chair
  - Treasurer
  - Programme Secretaries
  - Standards committee
3. Constitutional amendments
4. Fees alterations
5. Elections:
 

**Management Committee:**  
 Chair, Vice-Chair, Treasurer, Secretary, Programme Secretaries

**General Committee:**  
 Communications Secretary, Marketing and Web Site Secretary
6. Any Other Business



# The Habit

## (Or Testing It There and Back Again)

BCS SIGiST – Thursday 15 May 2003 – London Marriott Hotel, Grosvenor Square, London W1

### Abstracts

Please note that fuller versions of these abstracts together with biographies of the speakers can be found on our web site – [www.sigist.org.uk](http://www.sigist.org.uk)

#### Erik van Veenendaal

Improve Quality Services Ltd

##### Risk Analysis and Test Strategy (Morning Session)

**Abstract:** A major activity for during test planning is setting test priorities and defining and test strategy. This is done by means of a thorough risk analysis in communication with the major stakeholders. This presentation will discuss and present techniques for risk analysis and test strategy determination. Once the risks have been identified and analysed, appropriate techniques have to be defined to mitigate those risks. A difficult and experienced based task; however, a number of guidelines will be presented to assist in choosing the appropriate techniques. This presentation will address risk analysis and test strategy determination from a practitioner's point of view, not just from theory.

##### Test Estimation (Afternoon Session)

**Abstract:** Test estimation is usually done on an ad-hoc basis. It shows the consequences of the test approach in terms of effort and costs. Addressed will be a number of structured and proven techniques to improve the test estimation practices, e.g. brainstorming workshops, wide band delphi and test point analysis.

Three elements play a key part in the determination of a test budget: the size of the information system to be tested, the test strategy (which parts of the system and which quality characteristics should be tested and in what depth) and productivity. These three elements and their role in test estimation will be explained and discussed in detail.

#### Tony Carey Cap Gemini Ernst & Young

##### Case History: Test Tool Implementation

**Abstract:** The presentation describes the search for and implementation of a tool at Cap Gemini Ernst & Young to provide automated testing of a web application without depending on capture/replay tools or a browser.

Prompted by Ed Kit's talk at last year's May SIGiST, the implementation of the particular tool is described and the way in which the ideas and possibilities it provided have expanded. The tool itself is

the topic of another presentation by the vendor in an afternoon session.

The presentation introduces several techniques for effective automation of performance tests, and covers some of the most common pitfalls.

#### Chris Ambler Newell & Budge Ltd

##### Testing Both Ends of the Rainbow

**Abstract:** Identifying the real needs of a customer is fundamental to the delivery of a truly effective and valuable solution!

It may sound obvious but we have all walked into a prospective customer site with a preconceived idea of what the requirements and problems are. One of the hardest jobs in testing is to identify the real needs of the customer rather than what they think they need or you want to sell. It is no good to 'sell' Test Process Improvement to an organisation that is buried in operational problems. What they need is a solution to the pain they are suffering on a daily basis. Once the pain has gone away, then and only then is there an opportunity to look at improving the way testing is done, introducing risk based testing processes.

Time and budget constraints or a lack of understanding of what is possible are often key factors in arriving at any agreed solution. This presentation looks at the differences and potential added value of dealing with immediate pains before addressing longer-term enhancements.

#### Mike Smith Testing Solutions Group

##### Govern IT – Testing Principles Within a Corporate and IT Governance Framework

**Abstract:** With the increasing burden of regulation in the corporate world, many businesses are seeking to achieve a return on the investment associated with regulatory compliance.

Many issues relating to good governance are seen as an overhead to business management. But with so many high profile business scandals and failures, boardrooms cannot ignore the risks associated with failure to comply with regulation and good practice.

This presentation discusses where software testing and well established principles of

software verification and validation fit within the whole governance framework. It also lays down challenges and highlights opportunities to those in the software testing industry to take advantage of the current climate to demonstrate the importance of validation activities within the whole regulatory and compliance framework.

#### Anna Dearlove QualiControl (UK) Ltd

##### Test & Go Tool Presentation

**Abstract:** Test & Go is an effective yet simple-to-use tool for creating scripts to perform validations of any complexity.

Scripts are simple to develop and maintain, effective to deploy and use, with a high level of controls and suitability for any environment, particularly automated testing.

It removes the tedium from the task, dramatically reduces the time it takes to ensure the full integrity of any data being transmitted in any format and can save precious manual testing time.

In this session, Anna will give an overview of the Test & Go technology, explain how it was implemented at Cap Gemini Ernst & Young for testing purposes, give a demonstration of the Test&Go Developer and discuss some of the other uses of Test & Go scripts.

#### Peter Morgan Independent

##### Language, Truth and Lobsters

**Abstract:** The title partly aims to entice you to look beyond the four words that comprise it – and as you have got as far as this, it obviously had that effect didn't it. The subject matter cannot be neatly packaged by a pithy sound-byte; it is a tour of some strands from the history of science, logic and mathematics. These are not necessarily as far removed from "testing" as you may think, and there is clear collateral carry over into testing. The session aims to make you think, and re-examine some practices or thought processes. There is not necessarily anything new, but a presentation of some ideas from a different perspective, into the basis behind why we as testers do some of the things that we do. Some of the items addressed look at how "science" differs from science-like activities, and what make a scientific advance.

Fuller versions of these abstracts, together with biographies of the speakers, can be found on our website at [www.sigist.org.uk](http://www.sigist.org.uk)

# SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

Next conference:

## The Habit (Or Testing it There and Back Again)

Thursday 15 May 2003 – London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

### Registration Form

#### PERSONAL DETAILS

You may register by

**Fax** 01422 836 096 or 01422 839 472

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Marshwood Events Management,  
P O Box 445, Triangle, HX6 3YF

**Tel** 01422 836 431

**Email** SIGiSTregs@aol.com (giving all details required below)

Title \_\_\_\_\_

First Name \_\_\_\_\_

Family Name \_\_\_\_\_

**Invoice & Joining Instructions to be sent to** (please include company name):

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Tel \_\_\_\_\_

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Email \_\_\_\_\_

If you haven't heard from us by 8 May, please contact us on 01422 836 431

#### SPECIAL SESSIONS

Please indicate with a tick which of the parallel sessions you wish to attend (see programme for further details):

##### 10.45 Session

Tony Carey - Case History    **or**     Erik van Veenendaal  
Special Session

##### 14.00 Session

Mike Smith    **or**     Session Vendor Presentation

My question for Erik van Veenendaal is: \_\_\_\_\_

#### FEES

Include morning coffees, afternoon refreshments, luncheon, full set of presentation materials, and entry into the tools and services exhibition.

	Ex Vat	Inc VAT*
Ordinary Delegates	£195.00	£229.13
FullTime Students* and Academics	£85.00	£99.88

\* please inc copy of student ID (VAT @ 17.5%)

## Special Session

As you will see from the programme on page 1, we are having two parallel sessions during the day. The first at 10:45 is with Erik van Veenendaal, our featured speaker. Erik will be running a one hour in-depth workshop on risk analysis and test strategy, the subject of his first presentation. This Special

Session is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee.

The second parallel session at 14:00 is a vendor track. Following on from Tony Carey's case history of test tool implementation at Cap Gemini Ernst & Young, Anna Dearlove will be giving an overview and demonstration of QualiControl's Test & Go tool. This session is

limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. Pre-booking is recommended to ensure your place on either of these workshops. If you would like to take part, then please tick the appropriate box on the Special Session section of the registration form and, in the case of Erik's workshop, please provide one question that we can submit to Erik beforehand.

#### PAYMENT

By cheque made payable to '**BCS SPECIALIST INTEREST GROUP IN SOFTWARE TESTING**', by bank transfer (await details on invoice) or by credit card:

VISA     Mastercard     Access     Switch

Name on card \_\_\_\_\_

Expiry date \_\_\_\_\_

Issue number (Switch only) \_\_\_\_\_

Card Number \_\_\_\_\_

Amount \_\_\_\_\_

Billing address if different from first column \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

#### PURCHASE ORDERS

Does your company use Purchase Orders?     Yes     No

If so, please put the Purchase Order number here so that we can process your registration more quickly. If you tick the box above but do not know the Purchase Order Number we shall wait until we have one before processing.

Purchase Order No: \_\_\_\_\_

#### CANCELLATIONS

Cancellations must be received in writing prior to 8 May to qualify for refund of fees (less £10.00 administration charge). No-shows are liable for the full cost of fees. Substitutions may be accepted at any time.

#### VEGETARIAN MEALS/SPECIAL DIETARY REQUIREMENTS

I am a vegetarian

I cannot eat \_\_\_\_\_

#### CPD

The meeting is worth 5 hours CPD  
(Continuous Professional Development)

VAT Reg No GB 618 1687 24. In the unlikely event of cancellation, our liability will be limited to the refund of fees.

# Methodology Debates: Traps and Transformations

*(This article is adapted from work I did with Johanna Rothman, at the*

As a context-driven testing methodologist, I am required to think through the methods I use. Sometimes that means debating methodology with people who have a different view about what should be done. Over time, I've gained a lot of experience in debate. One thing I've learned is that most people have good ideas, but few people know how to debate them. This is too bad, because a successful debate can make a community stronger, while avoiding debates creates a nurturing environment for weak ideas. In this article, I want to talk about how to avoid the traps that make debates fail, and how to transform disagreement into powerful consensus.

## Traps

**Conflicting Terminology:** Be alert to how you are using technical terms. A common term like "bug" has different meanings to different people. If someone says "Unit testing is absolutely essential to good software quality." among your first concerns should be "What does he mean by 'unit testing', 'essential', and 'quality'?"

**Paradigm Conflict:** A paradigm is an all-inclusive way of explaining the world, generally tied into terminology and assumptions about people and practices. Two different paradigms may explain the same phenomena in totally different ways. When two people from different paradigms come together, each may seem insane to the other. Whenever you feel that your opponent is insane, maybe that's time to stop and consider that you are trying to cross a paradigmatic boundary. In which case, you should talk about that, first.

**Ambiguous Metrics:** Don't be seduced by numbers. They can mean anything. The problem is knowing what they do, in fact, mean. When someone quotes numbers at me, I wonder how the metric was collected, and what influenced the people who collected them. I wonder if the numbers were sanitized in any way. For instance, when someone tells me that he performed 1000 test cases, I wonder if he's talking about trivial test cases, or vital ones. There's no way

to know unless I personally review the tests.

**Confusing Feeling and Rationality:** Beware of confusing feeling communication with rational communication. Be alert to the intensity of the feelings associated with the ideas being presented. Many debates that seem to be about ideas may indeed be about loyalty, trust, respect, and other fundamental issues. A statement like "C++ is the best language in the world. All other languages are garbage" may actually mean "C++ is the only language I know. I'm comfortable with what I know. I don't want to concern myself with languages I don't already know, because then I feel like a beginner, again." There's an old saying that you can't use logic to refute a conclusion that wasn't arrived at through logic. That may not be strictly true, but it's a helpful guideline.

**Confusing Outcome and Understanding:** Sometimes one person can be debating for the purpose of getting a particular outcome, while the other person is debating to understand the subject better. Confusing these approaches can lead to a lot of unnecessary pain. So, consider saying what your goal is, and ask the other person what they want to get out of the debate. I recently found myself debating against someone who advocated that all tests should be automated. Under cross-examination, she clarified that her recommendation was based on a context where she thought people were too biased against test automation, and she was merely trying to counteract the bias with an opposite bias.

**Hidden Context:** You may not know enough about the world the other person lives in. Maybe work life for them is completely different than it is for you. Maybe they live under a different set of requirements and challenges. Try saying "I want to understand better why you feel the way you do. Can you tell me more about your [life, situation, work, company, etc.]?"

**Hidden History:** You may not know enough about other debates and other struggles that shaped the other person's position. If you notice that the other person seems to be making many incorrect assumptions

about what you mean, or putting words in your mouth, consider asking something like "Have you ever had this argument with someone else?"

**Hidden Goals:** Not knowing what the other person wants from you. You might try learning about that by asking "Are we talking about the right things?" or "What would you like me to do?" Keep any hint of sarcasm out of your voice when you say that. Your intent should be to learn about what they want, because maybe you can give it to them without compromising anything that's important to you.

**False Urgency:** Feeling like you are trapped and have to debate right now. It's always fair to get prepared to discuss a difficult subject. You don't have to debate someone at a particular time just because that person feels like doing it right then.

**Flipping the Bozo Bit:** If you question the sanity, good faith, experience, or intelligence of the person who disagrees with you, then the debate will probably end right there. You'll have a war, instead. So, if you do that, in the heat of the moment, your best bet for recovery may be to apologize, right away, and ask for forgiveness.

**Short-Term Focus:** Hey, think of the future. Successful spouses know that the ability to lose an argument gracefully can help strengthen the marriage. I lose arguments to my wife so often that she gives me anything I want. The same goes for teams. Consider a longer term view of the debate. For instance, if you sense an impasse, you could say "I'm worried that we're arguing too much. Let's do it your way." or "Tell you what: let's try it your way as an experiment, and see what happens." or "Maybe we need to get some more information before we can come to agreement on this."

## Transforming Disagreement

An important part of transforming disagreement is to synchronize your terminology and frames of reference, so that you're talking about the same thing (avoiding the "pro-life vs. pro-choice" type

by James Bach, james@satisfice.com

## 1st Amplifying Your Effectiveness conference)

of impasse). Another big part is changing a view of the situation that allows only one choice into one that allows many reasonable choices (the "reasonable people can bet on different horses" position). Here are some ideas for how to do that:

**Transform absolute statements into context-specific statements.** Consider changing "X is true" to "In situation Y, X is true." In other words, make your assumptions explicit. That allows the other person to say "I'm talking about a different situation."

**Transform certainties into probabilities and alternatives.** Consider changing "X is true" to "X is usually true" or "X, Y, or Z can be true, but X is the most likely." That allows the other person to question the basis of your probability estimate, but it also opens the door to the possibility of resolving the disagreement as a simpler matter of differing opinions on probability rather than the more fundamental problem of what is possible.

**Transform implicit stakeholders and concerns into explicit stakeholders and concerns.** Consider changing "X is bad" to "I don't like X" or "I'm worried about X" or "Stakeholder Y doesn't like X." There are no judgments without a judger. Bring the judger out into the open, instead of using language that make an opinion sound like a law of physics. This opens the door to talk about who matters and who gets to decide, which is often a more important issue than the decision itself.

**Translate the other person's story into your terms and check for accuracy.** Consider saying something like "I want to make sure I understand what you're telling me. You're saying that..." then follow with "Does that sound right?" and listen for agreement. If you sense a developing impasse, try suspending your part of the argument and become an interviewer, asking questions to make sure the other person's story is fully told. Sometimes that's a good last resort option. If they challenge you to prove them wrong or demand a reply, you can say "It's a difficult issue. I need to think about it some more."

**Translate the ideas into a diagram.** Try drawing a picture that shows both views of the problem. Sometimes that helps put a disagreement into perspective (literally). This can help especially in a "blind men and the elephant" situation, where people are arguing because they are looking at different parts of the same thing, without realizing it.

**Translate disagreement into shades of agreement.** Do you completely disagree with the other person, or disagree just a little? Consider looking at it as shades of agreement. You must agree on something. The color of the floor? The importance of oxygen? Focus on where you connect, and see if you can extend that a little.

**Transform your goal from being right to being a team.** Is there a way to look at the issue being debated as related to the goal of being a strong team? This is something you can do in your own mind to reframe the

debate. Is it possible that the other person is arguing less from the force of logic and more from the fear of being ignored? If so, then being a good listener may do more to resolve the debate than being a good thinker. Every debate is a chance to strengthen a relationship. If you're on the "right" side, you can strengthen it by being a gracious winner and avoiding I-told-you-so behaviour. If you're on the "wrong" side, you can strengthen the team by publicly acknowledging that you have changed your mind, that you have been persuaded. When you don't know who is right, you can still respect feelings and consider how the outcome and style of the debate might harm your ability to work together.

**Transform conclusions to processes.** If the other person is holding onto a conclusion you disagree with, consider addressing the process by which they came to adopt that conclusion. Talk about whether that process was appropriate and whether it could be revisited.

**Express faith in the other person.** If the debate gets tense, pause and remind the other person that you respect his good faith and intentions. But only say that if it's true. If it's not true, then you should stop debating about the idea immediately, and deal instead with your feelings of mistrust. Any debate that's not based on trust is doomed from the start, unless of course it's not really a debate, but just a war, a game, or a performance put on for an audience.

# Future Mailings

In future, we would prefer to send you *The Tester* by email.

(a) If you have received this edition of *The Tester* as a paper version by post and would like to receive a pdf version by email in the future, please contact the administration office at SIGISTregs@aol.com with a note of your name and the email address you wish us to use, if you have not already done so in response to the last mailing in February. Please put 'Email Tester' in the subject heading.

(b) If you have received this by email and would prefer a paper version by post, please let us know by emailing the address above. We will need your full mailing address, please. You will need to put 'Paper Tester' in the subject heading. We will then transfer you to the postal list.

#### How to get on the database:

If you have received this via a colleague and wish to be put on the database for future mailings, please let us know by using (a) or (b) above, according to your preference.

# 04

July 2003

# THE TESTER

- Automated testing in practice
- Recruiting and Retaining the Right Test Personnel
- Managing Fixed Price Test Projects
- Practical Experiences with Test Design Techniques
- OpenSTA – The professional's load testing tool that's FREE!
- eXPerience: Lessons What I Learnt

N E X T   C O N F E R E N C E

## The Return of the Ping

Thursday 11 July 2003

### FUTURE

SIGiST CONFERENCES

Thursday 18 September 2003

Tuesday 9 December 2003





## FROM THE EDITOR

Many thanks to those of you who attended the AGM in May. We like to have as much feedback as we can on the running of the SIGiST.

We were sorry to see Barbara Eastman step down from the role of Chair after three years in this capacity. As many of you will know, Barbara has also previously been Programme Secretary on the Committee and her time and efforts have been very valuable towards the smooth running of the SIGiST. The activities related to the roles Barbara has undertaken do take quite an amount of personal time, which is freely given, and she was thanked for her contribution at her presentation at the May meeting.

We are pleased to welcome Phil Trickey into the role of Chair. Phil has been Vice-Chair for some time, is a long standing member of the Committee and is well known within the SIGiST.

I hope that you continue to enjoy the new format of The Tester. You should all be aware of the fact that you can have either a hard or soft version. I know that some companies like to have copies on notice boards etc. The choice is yours!

As always we look forward to hearing about your practical experiences on testing projects. If you are interested in providing a paper at future SIGiST conferences please email Mark Fewster on [mark@grove.co.uk](mailto:mark@grove.co.uk)

Have a good summer!

Pam Frederiksen  
Communications Secretary  
Tel: **01483 881 188** (Leysen Associates)  
Fax: **01483 881 189**  
email: [pam@leysen.com](mailto:pam@leysen.com)  
BCS SIGiST website:  
[www.SIGiST.org.uk](http://www.SIGiST.org.uk)  
SIGiST Standards Working Party:  
[www.testingstandards.co.uk](http://www.testingstandards.co.uk)

## BCS SIGiST - THE RETURN OF THE PING

Thursday 10 July 2003 - London Marriott Hotel, Grosvenor Square, London W1

09:00	<b>Coffee &amp; Registration, Exhibition opens</b>	
09:25	<b>Introduction and Welcome</b> – <i>Philip Trickey, Chair</i>	
09:30	<b>Featured Speaker</b> Recruiting and Retaining the Right Test Personnel - Even When Things Look Bad <i>Ruud Teunissen, Gitek n.v.</i>	
10:15	<b>Book Review</b>	
10:30	<b>Coffee &amp; opportunity to visit the exhibition</b>	
11:00	<b>OpenSTA:</b> The professional's load testing tool that's FREE! <i>Antony Marciano &amp; Andy O'Brien, etest associates</i>	
11:45	<b>eXPerience:</b> Lessons What I Learnt <i>Richard Collings, Independent</i>	
12:30	<b>Networking session and commercial break</b>	
12:50	<b>Lunch &amp; opportunity to visit the exhibition</b>	
14:00	<b>Birds of a Feather and Table Talks</b> (see below for choices)	<b>Special Session</b> <b>Practical Experiences with Test Design Techniques</b> <i>Ruud Teunissen</i> Advanced booking see over
15:00	<b>Tea &amp; opportunity to visit the exhibition</b>	
15:30	<b>Tips for Testing</b>	
15:45	<b>Featured Speaker</b> The Art of Managing Fixed Price Test Projects <i>Ruud Teunissen, Gitek n.v.</i>	
16:30	<b>Closing Remarks</b>	

## BIRDS OF A FEATHER

The Birds of a Feather Session provides delegates with the opportunity to discuss their hot topic around a table with like-minded people. Choose from the topics listed below (please indicate your first and second choices of these topics on your registration form).

1. **Automation:** How do we make test automation stick?
2. **Influencing Managers:** Helping managers see beyond cost and time scales.
3. **Exit Criteria:** Which criteria work and how can they be implemented?
4. **Risk-Based Testing:** Experiences of what works and what doesn't.
5. **Test Policies:** What good are they and how can we use them?
6. **Test Process Improvement:** Successful initiatives.

Please feel free to submit other 'specific questions' (not just general areas) you would like to have discussed in addition to your first and second choices of the above list.

## TABLE TALKS

This is a new feature and we hope that it will prove to be popular. A topic will be presented by an expert to a small audience seated around a table (each table will be limited to a maximum of 10 people). This is like the Birds of a Feather groups but here one person will be doing most of the talking. The format and content of each Table Talk will be left to the individual giving the talk but it is expected to be informal.

Choose from the topics listed below (please indicate your first and second choices of these topics on your registration form).

1. **Measurement:** How to Measure Test Effectiveness (Dot Graham, Grove Consultants)
2. **Governance:** Testing, Project Intelligence and IT Governance (Paul Gerrard, Systeme Evolutif)
3. **People Issues:** Testers are Human Too (Richard Warden, Software Futures Ltd.)
4. **Process Improvement:** Getting Better
5. **Rapid Testing:** Getting Faster (Graham Freeburn, Newell & Budge Ltd.)

# The Return of the Ping

## Abstracts

**Ruud Teunissen**

Gitek n.v.

### Recruiting and Retaining the Right Test Personnel - Even When Things Look Bad



**Abstract:** In this presentation I will share our experiences in recruiting and retaining test engineers. We have learned that good testers are ambitious and want to be "tested" themselves – time and time again. That is why we developed the Test Career Cube – a guideline for career opportunities.

The Test Career Cube allows you to let testers grow from test engineer to test manager (first dimension). Not every tester has the same interests and strong points: the test career cube allows testers to differentiate: technical, methodical and managerial (second dimension). The final dimension is the backbone for each successful career: theoretical background, training, coaching, and (social) skills.

In the last part of my presentation, I will address the challenges of keeping your test personnel motivated, fascinated, enchanted, et cetera, when confronted with bad economic times and I will focus on ways to use the Career Cube even when things look bad.

### The Art of Managing Fixed Price Test Projects

**Abstract:** Fixed price projects have become more and more popular in software development, the demand for fixed price test projects is also increasing. But who is mad enough to do it? Controlling a normal test process is already a hell of a job, so who would be willing to sign a fixed price testing deal.

I will share our view on the possibilities on fixed price testing, discussing prerequisites, risks, test maturity, special skills required - including steel nerves.

We have in fact proven that fixed price test projects are possible and can be beneficial for all parties involved.

**Abstract:** In this workshop I will share our Experiences in applying test design techniques. Test Design Techniques have been available for a number of years. In

fact they form the basis for risk based testing – the test design techniques you use in your project define the depth, coverage, effectiveness, efficiency, et cetera of your tests. In fact I believe it is a sine qua non: no test design techniques imply no risk based testing.

The test design techniques we have used over the last years are based on the well-known principles (equivalence partitioning, boundary value analysis, condition/ decision coverage, operational use, etc.) and most of them are fully described in TMap® and other testing literature.

By using test design techniques you make your test process less dependent on the personal skills of that one good tester in your organisation, you can truly prepare and perform your test according to the risks, available resources etc. – in fact you can truly control your test process.

**Antony Marcano & Andy O'Brien**

etest associates

### OpenSTA – The professional's load testing tool that's FREE!

**Abstract:** The notion that a mature, reliable, fully functioned and efficient load testing tool is Open Source and free of licensing costs is of course ridiculous. If this was true, then why would anyone pay over £20,000 for a tool with similar features?

OpenSTA is a commercial strength performance testing tool based upon CORBA, and was originally developed by Cyrano. Running on Microsoft Windows, the tool is now Open Source, under the GNU general public licence, it is therefore FREE to use and the source code is freely available.

OpenSTA is a professionally maintained Open Source development project, maintained by a team of dedicated developers, a busy user group forum and commercial support & training services. The tool is therefore under continuous development and enhancement and is suitable for long-term projects. Commercial support services allow the tool to be used on mainstream projects where 'freeware' may normally have been considered too risky.

Many companies around the world including several multinationals have now recognised OpenSTA as a valuable and cost effective tool for performance testing their web based solutions.

This presentation will introduce the OpenSTA tool and provide an overview of its features and give tips on getting started. This will be followed with some real-life examples of how OpenSTA has been used to resolve some common performance testing challenges.

**Richard Collings**

Independent



### eXPerience: Lessons What I Learnt

**Abstract:** eXtreme Programming (XP) is an 'agile', 'lightweight' development and testing methodology that emerged from the OO community in the States about three or four years ago with a particular but radical focus on testing.

I had first come across XP at an earlier SIGiST meeting and, although a sceptic, I felt that it might have something to offer in helping us deliver the system within the time that we had available. In fact for reasons which I will explain in the presentation, we adopted a 'mix and match' approach, taking some elements of a more traditional approach and some elements of XP. Although the approach we took will horrify the XP purists (and the traditionalists), it largely worked (although we did hit some nasty problems on the way).

I found it a fascinating project to work on and, as a consequence, I have had to revise some deeply held beliefs about the best way of building and testing systems – beliefs which I think are widely held within the industry.

At the May SIGiST meeting, Peter Morgan gave a presentation entitled 'Language, Truth and Lobsters'. Copies of the paper that accompanied this talk can be obtained from Peter; e-mail him at [morganp@supanet.com](mailto:morganp@supanet.com)

# SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

Next conference:

## The Return of the Ping

Thursday 10 July 2003 - London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

### Registration Form

#### PERSONAL DETAILS

You may register by

**Fax** 01422 836 096 or 01422 839 472

**Post** SIGiST Conference Registration,  
Marshwood Events Management,  
PO Box 445, Triangle, HX6 3YF

**Tel** 01422 836 431

**Email** SIGiSTregs@aol.com (giving all details required below)

Title \_\_\_\_\_

First Name \_\_\_\_\_

Family Name \_\_\_\_\_

**Invoice and Joining Instructions to be sent to** (please indicate company name):

Company \_\_\_\_\_

Address \_\_\_\_\_

Postcode \_\_\_\_\_

Tel \_\_\_\_\_

Fax \_\_\_\_\_

Email \_\_\_\_\_

*If you haven't heard from us by 3 July, please contact us on 01422 836 431*

#### PARALLEL SESSIONS

Please indicate with a tick which of the parallel sessions you wish to attend at 14:00 (see programme for further details):

Practical Experiences with Test Design Techniques  
or

Birds of a Feather

Table Talks

1st Choice Topic \_\_\_\_\_

2nd Choice Topic \_\_\_\_\_

#### FEES

Including morning coffees, afternoon refreshments, luncheon, full set of presentation materials, and entry into the tools and services exhibition.

	Ex Vat	Inc Vat
Ordinary Delegates	£195.00	£229.13
Full Time Student* and Academics	£85.00	£99.98

\*please inc copy of student ID (VAT @ 17.5%)

#### PAYMENT

By cheque made payable to 'BCS SPECIALIST INTEREST GROUP IN SOFTWARE TESTING', by bank transfer (await details on invoice) or by credit card.

VISA  Mastercard  Access  Switch

Name on card \_\_\_\_\_

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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Does your company use Purchase Orders?  Yes  No

If so, please put the Purchase Order number here so that we can process your registration more quickly. If you tick the box above but do not know the Purchase Order Number we shall wait until we have one before processing.

Purchase Order Number: \_\_\_\_\_

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#### VEGETARIAN MEALS/SPECIAL DIETARY REQUIREMENTS

I am a vegetarian

I cannot eat \_\_\_\_\_

#### CPD

The meeting is worth 5 hours CPD  
(Continuous Professional Development)

Vat Reg No GB 618 1687 24. In the unlikely event of cancellation, our liability will be limited to the refund of fees.

### Special Session

As you will see from the programme overleaf, we are having a parallel session at 14:00, with Ruud Teunissen, our featured speaker. This Special Session is limited to the first 20 applicants

on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box on the Special Session section of this registration form.



# Automated testing in practice

## An alternative to Capture/Replay

In the software market of the 21st century, customers expect high quality products that do the job they are purported to do and that have been proved to a high degree. Customers are no longer willing to tolerate bugs in applications and focus on lack of testing as the problem. In customer surveys, comments such as *'The new function works well and looks good, but why does this other function no longer work properly?'*, *'I always do this function the same way, so why was this not tested properly?'*, are common with new software releases.

There are of course corresponding reactions from any software provider's test team - *'How can we test the whole system in shorter and shorter timeframes?'*, *'How can we test every line of code with a reduced test team?'*, *'How can we make sure our test data always reflects the production systems?'* It seems obvious then that by finding a solution to these types of issues we can give our customers peace of mind in relation to our software quality.

Quality is measured by customers in relation to the frequency and seriousness of problems occurring after an implementation. In order to ensure a high degree of excellence in their products, software providers must test them thoroughly and correct sources of any errors prior to full commercial release.

An immediate "light-bulb" response to the test team problems and one way to dramatically improve its productivity is to implement Test Automation. However, many attempts to automate software testing are not always successful. At first glance, it seems easy to automate testing: just buy one of the popular Capture/Replay tools, record the manual tests, and play them back whenever you want to. Unfortunately, as many of you will have discovered for yourselves, it not as simple as that in practice. Just as there is more to software design than knowing a programming language so there is more to test automation than knowing a testing tool.

In practice there are many examples of this of course. One that was presented at the last SIGIST meeting was within the

Application Testing department at Cap Gemini Ernst & Young. They have invested time and money in implementing a number of test tools and are actively using Capture/Replay. However, their automation process was maintenance heavy and still had areas of time-consuming manual intervention.

### Experience at CGE&Y

Early in 2002 Tony Carey, Test Strategist at CGE&Y, was asked to look at the test strategy (in relation to these issues) of a particular development project, which it was intended should be sold to other parties and should provide a 'tailorable' service to clients. The project was a large eCommerce development using XML to communicate with internal and external components. There were a number of particular things about this application that suggested it was a good candidate for automation. Importantly it was likely to be around for a long time, evolving over a number of application services and delivery channels and being sold to several clients. All communication (internal & external) was to use XML and relied heavily on XSLTs to manipulate it, in other words it had a formal rule based structure. The first release of the system was live and they were about to embark on the next phase. Two things in particular were apparent - the need to minimise regression testing and in conjunction, the need for more automation.

A Capture/Replay tool was already in use to provide some testing automation. Some 300 scripts had already been created which took data from an Access database to create the basic transactions needed for testing. Routing through the application functions was controlled by information taken from the XML form definitions and a series of functional and technical enhancements was planned over time requiring a continuing need for testing of all sorts.

This way of using Capture/Replay, generating routing data from the XML, provided a clever solution offering a lot of benefit to the testers. In particular it meant

that data loading to set up particular scenarios was much, much quicker. However, extracting the data from the XML was a laborious process and maintenance of the scripts was always lagging behind. Any long-term benefits were outweighed by the ever-growing maintenance needed. This meant automation only had a role after the application had been system tested and was useful for regression testing only if changes were limited.

The application was expected to have a long, multi-release product life, which implied lots of regression testing would be needed. However, because of the maintenance issue a long future of manual regression testing lay ahead, unless the maintenance requirements could be reduced to sustain this type of program. In addition, one client did not want to use a browser interface, which meant the current automation would not help anyway. Any significant screen redesign meant even more maintenance to the scripts and the XML extract.

A question was raised - 'Could the multitude of XML messages be tested without a particular user interface?' This would cut out the need for some of the 'Capture/Replay' and the associated maintenance. The ideal answers were firstly to fully automate the updating of the application testing data & navigation database. This would enable the development of tests to keep up with the development of the application. Secondly, to create the XML messages normally output from the browser, directly from the application testing data & navigation database. This would reduce the need for Capture/Replay. In fact it would enable the CGE&Y Test Team to separate the testing of the Application Functionality from the testing of the User Interface - a significant move.

To achieve this ideal it all seemed to depend on XML so the test team started to look for XML tools. There were a lot more than they had anticipated, but they were mostly programming aids not testing aids (at least not beyond unit testing). Talks with traditional test tool suppliers revealed that



they had great plans in this area but nothing as yet on the shelf.

This research gave rise to a few unexpected questions. Perhaps this was a data manipulation exercise? Could a data validation tool be used to compare actual values and outcomes with those expected and thus validate the transactions?

### Putting the ideas to the test

Tony decided to put one such tool, Test&Go, to the test on the particular eCommerce development that was ongoing. During a pilot phase it was essential that the tool could make sense of the 8000 line XML View State Model at the heart of the application, and that a transaction could be created, submitted to the system and a response captured.

The results were surprisingly quick - within days a number of usable automation scripts were generated to submit and record transactions. In one instance this allowed the replacement of a full day's Capture/Replay script maintenance per release with 1.5 hours data validation script development, with ongoing maintenance completed in minutes.

From this initial pilot a solution was developed creating a range of scripts to create the various transactions handled by the system. These scripts use both valid and invalid data from a database, and checked both the structure and content of XML

messages. Each test evaluates the response received from the system against expected results; valid data gets the correct response, invalid data gets the 'correct' error message. Unexpected or unpredicted results appear on a comprehensive error report.

The effects of implementing such a solution have been encouraging. As Tony explains "The underlying application can be tested independently of the development of the user interface - improving the level of automation whilst reducing maintenance to a much smaller part-time task. The outcome has been the creation of a process independently testing the application (and its messages) and the user interface which by its nature will always have a large manual component."

### Benefits of using Data Validation tools

You may be wondering what some of the tangible benefits are to implementing such a solution to enhance your test automation processes.

The experience at CGE&Y has shown a number of benefits - some of which are that:

- Focussing on the correct flow, content and structure of data within an application, rather than on the front-end data input, increases the coverage and quality of tests.
- A reduction in test effort frees up resources for future phases and means less dependence on key individuals.

- More comprehensive and automated regression testing is available from the same set-up effort.
- The number of test scripts can be cut (up to a third in this case), thus significantly reducing the ongoing maintenance required.

As we can see from this experience there are a few general lessons that can be learnt about automated testing. Firstly, focusing on the 'Application' testing rather than the 'User Interface' testing can enhance automation effectiveness. Secondly, test automation should be treated as part of the Test Specification process, then as a development project within an implementation of testing.

In practice, automated testing can be complex to implement and no one tool is a panacea. Capture/Replay is one element that has its place but with data quality and management becoming more and more important, perhaps now is the time to consider data validation tools as aids to automated testing.

### Anna Dearlove

adearlove@qualicontrol.com

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For more information, go to [www.qualicontrol.com](http://www.qualicontrol.com).

# Future Mailings

In future we would prefer to send you *The Tester* by email.

(a) If you received this edition of *The Tester* as a paper version by post and would like to receive a pdf version by email in the future, please contact the administration office as SIGiSTregs@aol.com with a note of your name and the email address you wish us to use, if you have not already done so in response to the last mailing in May. Please put 'Email Tester' in the subject heading.

(b) If you have received this by email and would prefer a paper version by post, please let us know by emailing the address above. We will need your full mailing address, please. You will need to put 'Postal Tester' in the subject heading. We will then transfer you to the postal list.

### How to get on the database:

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# 05

September 2003

# THE TESTER

- **How Open-Source and Commercial Software Compare**
- **The Use of Precise Specification in Testing**
- **Adventures in Session-Based Testing**
- **Outsourcing and Risk Management**
- **Use of Mindmaps in Testing**

N E X T   C O N F E R E N C E

## Quest for the Best Test

Thursday 18 September 2003

**FUTURE**  
SIGiST CONFERENCES

Tuesday 9 December 2003





## FROM THE EDITOR

Well, a lovely summer and also signs of more testing business in the marketplace!

As you know, the SIGiST conferences are an excellent way of networking and if you are looking for employment there are nearly always companies who are looking for more testers at our meetings. These are generally verbally advertised in the networking/commercial break session, but you never know who you might be sitting next to at lunch time – could be a new opportunity!

If you are wanting to make an announcement in the networking session but for whatever reason do not want, or will not be available, to present it yourself then I will be pleased to make short announcements on your behalf. I will also place more information on the notice board.

The July session received very good assessments from the attendees, and our featured speaker Ruud Teunissen went down very well. You will note that at the September conference we will have two parallel sessions, one being a workshop necessitating the use of a laptop for more involvement from attendees.

Book now!!

Pam Frederiksen  
Communications Secretary  
Tel: **01483 881 188** (Leysen Associates)  
Fax: **01483 881 189**  
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SIGiST Standards Working Party:  
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## BCS SIGiST – QUEST FOR THE BEST TEST

Thursday 18 Sept. 2003 – London Marriott Hotel, Grosvenor Square, London W1

08:30	Coffee & Registration, Exhibition opens	
09:25	<b>Introduction and Welcome</b> – <i>Philip Trickey, Chair</i>	
09:30	<b>Featured Speaker</b> <b>The Use of Precise Specification in Testing</b> <i>David Parnas, University of Limerick</i>	
10:15	Coffee & opportunity to visit the exhibition	
10:45	<b>Adventures in Session-Based Testing</b> <i>James Lyndsay, Workroom Productions</i>	
11:30	<b>Featured Speaker</b> <b>Constructing Precise Specifications for Use in Testing</b> <i>David Parnas, University of Limerick</i>	<b>Special Session 1</b> <b>Getting a Grip on Exploratory Testing</b> <i>James Lyndsay &amp; Neil van Eeden</i> Advance booking see below Ends 12:35
12:20	Book Review	
12:35	Networking session and commercial break	
12:50	Lunch & opportunity to visit the exhibition	
14:00	<b>Use of Mindmaps in Testing</b> <i>Graham Freeburn, Newell &amp; Budge</i>	<b>Special Session 2</b> <b>Constructing a Testable Specification</b> <i>David Parnas</i> Advance booking see below End 15:00
14.45	Book Review	
15:00	Tea & opportunity to visit the exhibition	
15:30	Tips for Testing	
15:45	<b>Outsourcing and Risk Management</b> <i>Keith Klain, UBS Investment Bank</i>	
16:30	Closing Remarks	

The SIGiST committee reserves the right to amend the programme if circumstances deem it necessary.

### Special Session 1

The parallel session at 11:30 is a workshop with James Lyndsay. This is a hands-on workshop and discussion of exploratory testing methods. This will give participants an opportunity to actually do some exploratory work, rather than just talk about it. Participants will be required to bring their own laptop computer. A few small files will be provided by James on the day (CD, floppy, USB key) that will need to be loaded onto each laptop.

This workshop is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box on the Special Session section of the enclosed registration form.

### Special Session 2

The parallel session at 14:00 is a workshop with David Parnas, our featured speaker. Following on from his two morning presentations on Precise Specifications, David will guide participants to produce a Precise Specification from an informal description of a problem.

This workshop is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box on the Special Session section of the enclosed registration form.

### Signed copies of the Testing Practitioner

We have a few signed copies left of The Testing Practitioner by Erik van Veenendaal. The price is £25.00 plus P&P. Contact Claire Mason at the Admin Office if you would like a copy (Tel: 01422 836431).

# Quest for the Best Test

## Abstracts

**David Parnas**

Limerick University



### The Use of Precise Specification in Testing

**Abstract:** Discussions of test results often degenerate into debates about what the project should do. Testers are severely handicapped by the lack of a complete and precise specification. This presentation will discuss what we could do with a precise specification.

### Constructing Precise Specifications for Use in Testing

**Abstract:** Precise specifications can be constructed systematically and help to make many decisions that would otherwise be made by programmers and testers. This presentation will illustrate how precise specifications can be constructed using tabular expressions.

### Workshop: Constructing a Testable Specification

**Abstract:** Participants will be given an informal description of a problem and helped to produce a precise specification of the sort illustrated in the earlier lectures.

**James Lyndsay & Neil van Eeden**

Workroom Productions



### Adventures in Session-Based Testing

**Abstract:** Session-based testing can be used to introduce measurement and control to unscripted, open-ended test approaches and can form a foundation for significant improvements in productivity and error detection. The techniques are particularly helpful in controlling reactive, fire-fighting test teams, and in bringing agility and focus to exploratory methods.

Using two real-world case studies, this talk looks at the introduction and implementation of session-based testing. It details the session-based methods initially proposed, and notes problems, solutions and improvements found in their implementation – particularly focusing on risk, coverage, test case selection and

prioritisation. The talk also covers tools and simple metrics, recording sessions and the importance of feedback at a number of levels to allow process improvement.

Finally, the talk picks up on common team issues; responsibility and empowerment, coaching and skills transfer, and what it is like to work in a session-based test team.

### Workshop: Getting a Grip on Exploratory Testing

**Abstract:** This is a hands-on workshop and discussion of exploratory testing methods. This will give participants an opportunity to actually do some exploratory work, rather than just talk about it. Participants will be required to bring their own laptop computer. A few small files will be provided by James on the day (CD, floppy, USB key) that will need to be loaded onto each laptop.

**Keith Klain**

UBS Investment Bank



### Outsourcing and Risk Management

**Abstract:** UBS Investment Bank's (UBS) approach to outsourcing in the Quality Assurance department utilises a component based operational model for test execution, automation, and environment management. The primary objectives of the move towards outsourcing focused on cost control for operating the quality assurance and release management teams as well as meeting the increase in 2003 project requirements. Additionally, the quality assurance team had initiated a test process improvement programme that could be accelerated through the use of a 3rd party with test automation and non-functional testing expertise.

Building off the strength of its IT delivery reputation, UBS took a phased approach to implementation of the model and in the first and second quarter of 2003 several activities were run in parallel to prepare the programmes for remote team management and a flexible approach to staffing. Test process and release management were re-organised to a centralised team as well as knowledge management

for training and project documentation. Smaller, local test teams were created with an increase in focus on programme level test strategies whilst removing environment management as an internal function entirely.

Vendor selection was conducted over four months and included an RFI, RFP, reviews of existing UBS outsourcing vendors and a visit to vendor locations in Bangalore, Chennai, and Mumbai. Knowledge management, training on in-house technologies and applications, as well as specific testing delivery and management processes were included in the service level agreement. Full integration of the test model for all programmes will be completed by Q4 2003 realising a £600k saving including transition costs, whilst expanding test coverage by 60% and maintaining 90% of the permanent staff.

**Graham Freeburn**

Newell & Budge

### Use of Mindmaps in Testing

**Abstract:** Mindmaps are powerful 'visual thinking' tools that have many applications in learning, personal development, problem solving, etc. Since Tony Buzan first introduced them in his book 'Use your head' in 1974 they have helped millions of people to improve their mental skills and abilities. They have many potential applications in the field of software testing and using examples of mindmaps he has built and some provided from other testers who use the techniques, Graham Freeburn, who has used them for many years; will demonstrate how this powerful technique can be applied.

The presentation will:

- Introduce you to mindmaps – what they are and how they work
- Provide examples of their use in testing – from ISEB revision to Test Strategies
- Demonstrate how excellent software is now available to help the non-artists among you to use them
- With your help, will interactively build a mindmap of the "Top 10 problems of Test Automation" in the session

# How Open-Source and Commercial Software Compare: A Quantitative Analysis of TCP/IP Implementations in Commercial Software and in the Linux Kernel

We provide an automated software inspection service that is used by leading commercial software vendors to identify defects and provide metrics regarding the quality of the inspected code. This inspection service is based on a combination of technology and a repeatable process, and enables us to maintain a database of metadata about code quality. This database provides a unique opportunity to independently assess the quality of software.

## What is Open Source and why might it be better?

Most commercial software vendors distribute their products in the form of executable or object code. Their customers do not acquire a licence to use the source code, so they cannot change or extend the functionality of the executables, except by specific arrangements with the vendor. They are generally prohibited from redistributing a changed or extended version to others. With few exceptions, customers of commercial software vendors must rely on the vendor to make changes and extensions.

Open source software represents a fundamentally different way in which software is developed, sold, and maintained. For example, the source code can be modified by many people without the need for those people to be employed by the same software vendor.

Open source proponents believe that, for important pieces of software, the open source model encourages several activities that are not common in the development of commercial code:

- Many users don't just report bugs, as they would do with commercial software, but actually track down their root causes and fix them.
- Many developers are reviewing each other's code, if only because it is important to understand code before it can be changed or extended. It has long been known that peer review is the most effective way to find defects.
- The open source model encourages programmers to organise themselves around a project based on their contributions. The most effective programmers write the most crucial code, review the contributions of others, and decide which of these contributions are incorporated into the next release.

- Open source projects don't face the same type of resource and time pressures that commercial projects do. Open source projects are rarely developed against a fixed timeline, affording more opportunity for peer review, and usually offer extensive beta testing before "release."

For these reasons, open source enthusiasts claim that the open source model produces better quality software than commercial software development.

## Software inspection

Software inspection – the process of examining source code to identify defects – is a standard practice in development organisations and is widely recognised as the best way to find defects. Inspection is hardware-independent, does not require a "runable" application or a suite of test cases, and does not affect code size or execution speed. But until recently, it has been a manual process – very slow, and very costly – or tools-based and hard to implement effectively.

The majority of code inspections are performed manually. Although a human reading the code line-by-line can theoretically uncover the greatest number of defects, the process is slow, painstaking, and fraught with inconsistency. Also, this approach does not scale to handle today's multi-million line applications. As a code base grows, the cost of a complete manual inspection becomes prohibitive and the volume of code is intimidating to developers. In practice, manual inspections are only performed on subsets of the source code.

Inspection tools are able to perform only a portion of the inspection process, requiring significant further manual review. The inspections tools generate a large volume of defect 'warning messages' many of which are, in fact, false positives. The inspection tool "thinks" it has found a defect, but a deeper manual analysis of the context shows that the reported issue is not actually a defect. This false positive problem is very severe. Frequently, the rate will exceed 50 false positives to each true positive; in other words, only 2% of the warning messages represent defects.

## Reasoning's automated software inspection service

Our automated software inspection service provides many of the benefits of a manual code review in significantly less time and at dramatically lower cost than manual inspection or internal use of inspection tools. With the service, in-house resources are not diverted from current development projects. We identify defects that cause application crashes and data corruption, and provide actionable reports. The error classes in C and C++ include:

- Memory leak: *Reference to allocated memory is lost*
- NULL pointer dereference: *Expression dereferences a NULL pointer*
- Bad deallocation: *Deallocation is inappropriate for type of data*
- Out of bounds array access: *Expression accesses a value beyond the array*
- Uninitialised variable: *Variable is not initialised prior to use*

The output of the inspection is a set of reports that:

- Make defect analysis fast and simple by identifying the location and describing the circumstances under which the defects will occur;
- Identify the parts of the code with the greatest risk, enabling the development organisation to focus QA and testing resources where they are most needed;
- Compare the customer's code quality with a benchmark (related to other inspections done by us).

## The Study and Methodology

Of the thousands of open source applications available, we chose the Linux, operating system. This general-purpose operating system has been under development for nearly a decade, is widely used and is actively maintained and enhanced by a community of thousands of programmers.

However, comparing the quality of several entire operating systems is a challenge, primarily because the size, scope and goals can be so different. Instead, we chose a common function implemented by all the projects in our study, the TCP/IP network

protocol "stack". There were several reasons for this decision. This protocol is usually in the operating system "kernel", the lowest level software in the system; thus defects can have a major impact, including inability to communicate, system crashes, network outages, and security violations.

Each project was inspected using our standard automated software inspection process.

### The commercial projects

We have conducted inspections of five different commercial TCP/IP implementations, including implementations from both general-purpose operating systems and embedded applications.

Four of the five implementations are considered mature, having been in commercial use for over ten years (although the TCP/IP code is under active development). The fifth

is relatively young: it was started about three years ago.

The size of these projects ranges from 64 KLSC to 269 KLSC. For reasons of client confidentiality, we cannot disclose further information about these projects.

### The Linux inspection

We inspected the TCP/IP implementation in version 2.4.19 of the Linux kernel. We chose this version because it was the latest "stable" release at the time of the study. The TCP/IP code was inspected in isolation from the rest of the kernel, using the exact same process we use for customer projects.

The open source TCP/IP implementation includes 166 source files with just under 82 thousand lines of source code (KLSC) in size, not including user include files, header files, blank lines and comments. We found 8 defects, resulting in a defect density of 0.10 defects/KSLC.

## Comparison Results

The table below summarises the results for the five inspection classes.

Error class:	Commercial:	Open Source:
Memory leak:	43	1
NULL pointer dereference:	128	3
Bad deallocation:	0	0
Out of bounds array access:	9	3
Uninitialized variable:	132	1
<b>Total:</b>	<b>312</b>	<b>8</b>

Note that there are no bad deallocations. However, since the applications are generally fairly mature and all are written in C rather than C++, this is not particularly surprising. Bad deallocations that occur in C are generally beginner's mistakes (much more so than the other defect classes), and tend to happen on the path the code is intended to take, so there



## ICSTEST®-UK 9th-10th September 2003 Café Royal, London

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**Day 1** of the conference opens with a keynote from John Noakes, .NET advisor from Microsoft and will cover 'Quality and Testing in Converging Technologies'.

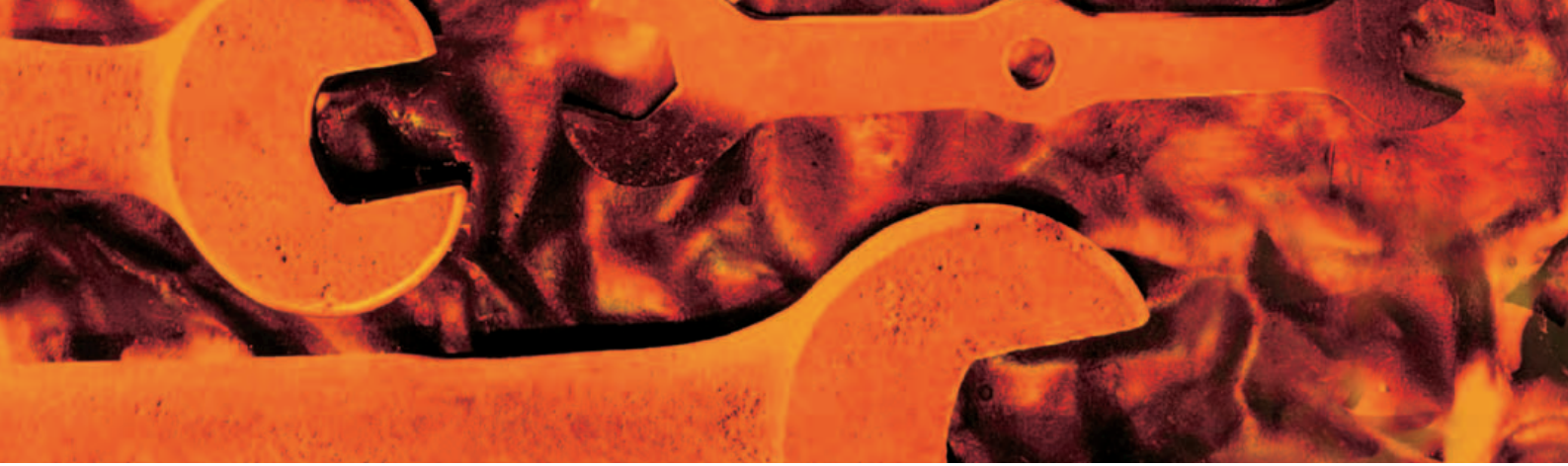
**Day 2** opens with a keynote from Christa Menke-Suedbeck, CIO of Deutsche Bank covering 'Smart Sourcing', a new way of managing and delivering software testing.

The conference also has four tutorials delivered by leading specialists on Monday 8th September covering:

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is a large likelihood they get caught quickly.

In light of the relative maturity of the commercial applications and the open source model of the Linux code, perhaps one should be surprised that any defects remain at all. Given the amount of testing that all the code bases had undergone before the inspections, this also confirms that testing is not enough: inspection finds defects that escape testing.

Of course, the five commercial applications together contain much more source code than the one open source application. Therefore it makes much more sense to look at defect densities.

#### Feedback from the developers on Linux inspection

We submitted the details to people on the kernel networking list and have received the following feedback so far:

- The memory leak is a real defect. Independently of this inspection, it has been fixed in version 2.4.20.
- The out of bounds array accesses are not real defects, because the kernel would not work if they were.
- The uninitialized variable is not a defect. This is code implementing a tiny interpreter, and the uninitialized variable represents variables in the interpreted language. These variables have random values when the interpretation starts, and it is the responsibility of the interpreted program to initialise the variables before they are used.
- We have not received definitive feedback on any of the null pointer dereferences.

In summary: one defect is real, 4 defects are not real, and 3 are undecided.

#### Defect repair comparison

Since those most familiar with the application are best able to determine the need to repair any individual defect, the most reliable metric is which defects need to be fixed according to the developers or maintainers of the code.

The table below reflects the reported defects, the repaired defects, and the defect density (defects/KLSC where KLSC stands for Kilo Lines of Source Code) for the commercial projects and the open source project. Since we have not yet received feedback on many of the defects reported to the Linux kernel maintainers, the real number for the open source code may be higher.

	Reported:	Repaired:	Size (KLSC):	Reported/Size:	Repaired/Size:
Commercial:	312	235	568	0.55	0.41
Open Source:	8	1	81.9	0.10	0.013



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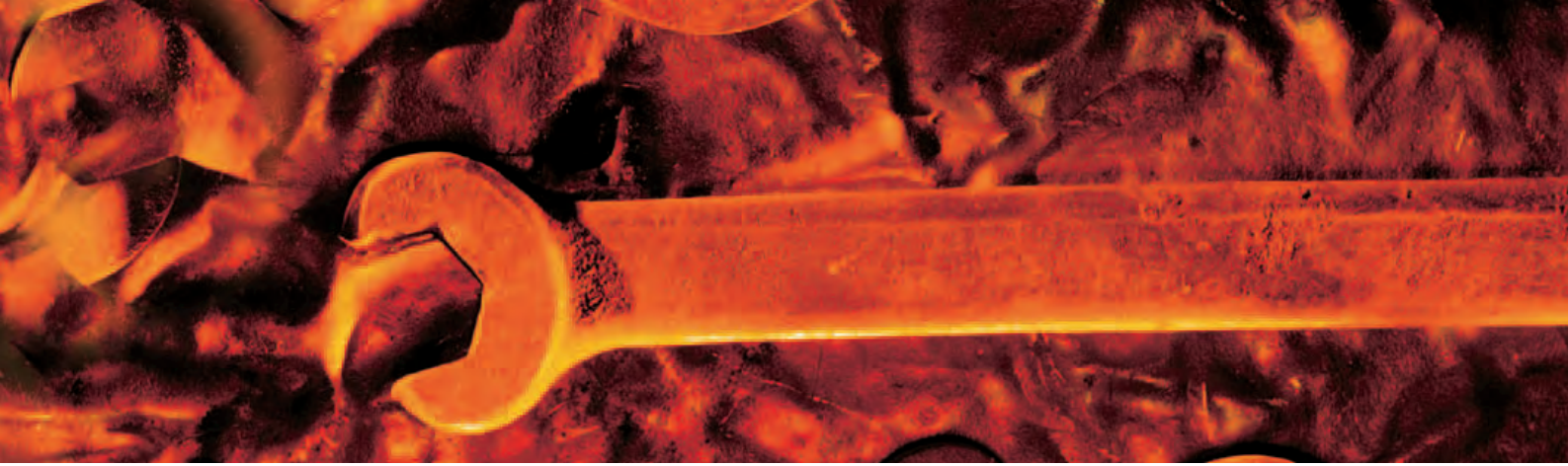
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On average, both the reported and the repaired defect densities are higher for the commercial implementations compared to the open source implementation.

## Conclusions

This study compares five commercial implementations of TCP/IP, the fundamental protocols underlying the Internet, with the TCP/IP implementation in version 2.4.19 of the Linux kernel, an open source general purpose operating system.

The open source implementation of TCP/IP in the Linux kernel exhibits significantly lower defect density when compared to the five commercial applications and falls within the "Best Third" of source code projects inspected by Reasoning.

## About Reasoning Inc

Reasoning is a leading provider of automated software inspection services that helps development organisations reduce the time and cost involved in finding software defects. The company's business is focused on organisations that develop C and C++ applications. Reasoning is headquartered in Mountain View, CA, USA. The full Linux inspection report can be downloaded from URL <http://www.reasoning.com/downloads/inspectionreport.html>. The full comparison paper is available at <http://www.reasoning.com/downloads/opensource.html>. For further discussion about these results and/or the Reasoning service, please contact Rix Groenboom ([rix.Groenboom@reasoning.com](mailto:rix.Groenboom@reasoning.com)).

## Membership of SIGiST

At its meeting in February, the SIGiST Committee decided that we would no longer run a membership scheme. If you are on our database, then you will automatically receive details of our events and regular copies of The Tester. If you do not receive The Tester you can add yourself to the database by going to <http://www.sigist.org.uk/cgi-bin/register.asp>. You may also change your details or unsubscribe at this site.

If you would like to receive information by post please contact the Admin Office at [SIGiSTregs@aol.com](mailto:SIGiSTregs@aol.com) heading up your email 'Mailing List'. Thanks.

This change means that there is now one flat rate for the SIGiST conferences with concessions only for academics and students. Everyone on the database will receive all other benefits hitherto associated with membership – access to the SIGiST library for instance.

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The Tester is distributed to the database of the Specialist Interest Group In Software Testing (SIGiST), which is part of the British Computer Society (BCS). With over 2,500 professional testers and IT professionals, we are the largest group of specialist testers and they need to know about your products and services. Additionally the The Tester is downloadable from our website [www.sigist.org.uk](http://www.sigist.org.uk) and is accessed by IT professionals looking for testing related information.

The Tester can now offer you the opportunity to place your organisation in front of these specialists at a very affordable price as we can allocate 2 extra pages of the magazine to you.

The costs are £300 for a half page advertisement and £200 for a quarter page. To book your space for the next issue, please contact Claire Mason on 01422 836431 or email [SIGiSTregs@aol.com](mailto:SIGiSTregs@aol.com). The advertising space will be allocated on a first come first served basis. The closing date for confirmation is 26 September 2003 and the artwork will be required by 3 October 2003.

If you require any help with artwork, this can be provided for a small charge. Technical details for the material will be provided when your space is confirmed. All costs exclude VAT.

For any other information please do not hesitate to contact Claire.

# SPECIALIST INTEREST GROUP IN SOFTWARE TESTING

Next conference:

## Quest for the Best Test

Thursday 18 September 2003 – London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

### Registration Form

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*If you haven't heard from us by 11 Sept, please contact us on 01422 836 431*

#### PARALLEL SESSIONS

Please indicate with a tick, one parallel session for each time slot  
(see programme for further details):

11.30	14.00
<input type="checkbox"/> Dave Parnas	<input type="checkbox"/> Graham Freeburn
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Cancellations must be received in writing prior to 11 September to qualify for refund of fees (less £10.00 administration charge). No-shows are liable for the full cost of fees. Substitutions may be accepted at any time.

#### VEGETARIAN MEALS/SPECIAL DIETARY REQUIREMENTS

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#### CPD

The meeting is worth 5 hours CPD  
(Continuous Professional Development)

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# 06

December 2003

# THE TESTER

- **The Banana Principle for Testers**
- **Amplifying Your Effectiveness**
- **HELIOS: A Slightly Unusual Case Study**
- **A Quality Dashboard for Testing**
- **Quality Metrics for Testers**
- **Large scale integration testing**

N E X T   C O N F E R E N C E

## We Three Testers from America Are

Tuesday 9 December 2003

## FUTURE

SIGIST CONFERENCES

Thursday 4 March 2004

Friday 18 June 2004

Friday 3 September 2004

Thursday 2 December 2004





## FROM THE EDITOR

I find it hard to think that this is the end of yet another year and here we are promoting our pre-Christmas conference. As usual we have an excellent programme planned so please book as soon as possible.

As you know, there is an option of having both soft and hard copies of The Tester and it is cheaper for us to send out as many soft copies as we can. However, a lot of companies like to keep a copy of The Tester out for others to read – on notice boards etc so please bear this in mind when deciding which version you want. There is also an element of out of sight, out of mind when receiving a soft copy so if you are planning to come to a future conference, best to book when you get the information. If you wish to change the version you get currently then please email Claire Mason at SIGIST Registration, contact details are on the back page.

Claire is also the contact for the SIGIST library. There are lots of testing books which are available for you to borrow and she will be pleased to forward a list of these.

Have you been involved recently in a taxing testing project? If so, these are the kind of practical presentations that we like to hear at the SIGIST conferences so why not volunteer to present a paper in the future? Contact Mark Fewster on mark@grove.co.uk

Book now for the December SIGIST!

Pam Frederiksen  
Communications Secretary  
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[www.testingstandards.co.uk](http://www.testingstandards.co.uk)

# BCS SIGIST – WE THREE TESTERS FROM AMERICA ARE

Tuesday 19 Dec 2003 – London Marriott Hotel, Grosvenor Square, London W1

09:00	Coffee & Registration, Exhibition opens	
09:25	<b>Introduction and Welcome</b> – <i>Philip Trickey, Chair</i>	
09:30	<b>Featured Speaker</b> <b>Quality Metrics For Testers: Evaluating Our Products – Evaluating Ourselves</b> <i>Lee Copeland, Software Quality Engineering</i>	
10:15	Coffee & opportunity to visit the exhibition	
10:45	<b>Rapid Test Automation</b> <i>James Bach, Satisfice</i>	
11:30	<b>Cognitive Illusions in Development and Testing</b> <i>Dot Graham, Grove Consultants</i>	<b>Special Session 1</b> <b>An Exercise in Test Case Reasoning</b> <i>James Bach</i> Advance booking see below Ends 12:35
12:20	Book Review	
12:35	Networking session and commercial break	
12:50	Lunch & opportunity to visit the exhibition	
14:00	<b>HELIOS: A Slightly Unusual Case Study</b> <i>Mark Sproson, Themis Testing Consultancy Ltd</i>	<b>Special Session 2</b> <b>A Quality Dashboard For Testing: Using (And Abusing) Metrics</b> <i>Lee Copeland</i> Advance booking see below End 15:00
12:20	Book Review	
15:00	Tea & opportunity to visit the exhibition	
15:30	Tips for Testing	
15:45	<b>Featured Speaker</b> <b>The Banana Principle For Testers: Knowing When To Stop Testing</b> <i>Lee Copeland, Software Quality Engineering</i>	
16:30	Closing Remarks	

The SIGIST committee reserves the right to amend the programme if circumstances deem it necessary.

## Special Session 1

This Special Session at 11:30 is a hands-on workshop with James Bach.

Using playing cards for an interface, we're going to try rapidly to explore and predict the behaviour of a simulated system. You can volunteer to try the exercise or just sit back and watch, either way you'll learn something about the process of thinking through a testing problem under pressure. It's the sort of exercise you can take back to work and try on your fellow testers.

This workshop is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 1 on the enclosed registration form.

## Special Session 2

The parallel session at 14:00 is a workshop with Lee Copeland, our featured speaker.

This workshop will give you experience in choosing, defining, using, and evaluating metrics for a "Quality Dashboard," a set of indicators of the effective and efficiency of our testing process. First, we will review Vic Basilli's QGM model. Then, in teams, you will name and define a metric, determine how the metric is obtained and from whom. In addition, you will consider how precise the metric is and how precise it must be to be useful. Your team will then consider how we could be deceived by the metric itself and how we could be deceived by the supplier of the metric. You'll then consider how we could discover and remedy that deception. Each team will present their findings to the group.

Join Lee for an interesting and interactive discussion of testing metrics.

This workshop is limited to the first 20 applicants on a first-come, first-served basis. There is no additional fee. If you would like to take part, then please tick the box for Special Session 2 on the enclosed registration form.

# Abstracts: We Three Testers from America Are

**Lee Copeland**  
Software Quality  
Engineering



**Author: A Practitioner's Guide to Software Test Design**

## **The Banana Principle for Testers: Knowing When to Stop Testing**

**Abstract:** A little boy comes home from school and his mother asks, "What did you learn in school today?" The boy responds, "Today we learned how to spell 'banana' but we didn't learn when to stop." As testers we face that same problem. We know how to do effective testing. But how do we know when to stop? How do we know we have done enough testing?

In this presentation, Lee analyzes the advantages and disadvantages of each of the five most common stopping criteria – (1) testing has met previously defined coverage goals, (2) the defect discovery rate drops below a previously defined threshold, (3) the marginal cost of finding the next defect exceeds the expected loss from that defect, (4) the project team reaches consensus on product release, and (5) the boss says "Ship It!"

Join Lee for a discussion of this vital, but often ignored, part of the testing process.

## **Quality Metrics for Testers: Evaluating Our Products – Evaluating Ourselves**

**Abstract:** As testers we love to evaluate the quality of software products. In this presentation, Lee first addresses common types of metrics that we, as testers, often use to evaluate the quality of software products. These include counts, counts over time, ratios, and customer satisfaction. Specific metrics include the number of defects (raw, weighted, and grouped by severity, module occurrence, and status), the number of defects over time showing possible trends, defects/KLOC and defects/Function Points, surveys, and number of support calls.

Then Lee asks: Are we as comfortable evaluating the quality of our own work as we are the work of others? He then presents the next level of testing maturity – the willingness and ability to evaluate ourselves. Using the same types of metrics (counts, counts over time, ratios, and customer satisfaction) he presents a number of metrics useful for evaluating our own testing process. These include number of defects found, defect age, phase age, rework cycles, code coverage, and defect removal effectiveness.

Join Lee for an evaluation of your own testing maturity level.

## **Workshop: A Quality Dashboard for Testing: Using (and Abusing) Metrics**

**Abstract:** This workshop will give you experience in choosing, defining, using,

and evaluating metrics for a "Quality Dashboard," a set of indicators of the effective and efficiency of our testing process. First, we will review Vic Basilli's GQM model. Then, in teams, you will name and define a metric, determine how the metric is obtained and from whom. In addition, you will consider how precise the metric is and how precise it must be to be useful. Your team will then consider how we could be deceived by the metric itself and how we could be deceived by the supplier of the metric. You'll then consider how we could discover and remedy that deception. Each team will present their findings to the group.

Join Lee for an interesting and interactive discussion of testing metrics.

**James Bach**  
Independent Consultant



## **Co-author: "Lessons Learned in Software Testing" & "Amplifying Your Effectiveness" Rapid Test Automation**

**Abstract:** Test automation efforts often end up in a quagmire. Expensive test tools are purchased and handed off to testers who may not have the time or skills to write robust test programs. Or the tools are delivered to the custody of a dedicated test automation team, which disappear into a dark room, trying to design and deploy the ultimate automation framework. Months later, there are a whole lot of scripts – but somehow not much that runs. People ask "whatever happened to test automation?"

Rapid test automation is an approach that does much more and costs much less than the typical test automation project. And it delivers working results really fast. What's the catch? It takes a skilled toolsmith with great people skills. But just one can support a lot of testers.

## **Workshop: An Exercise in Test Case Reasoning**

**Abstract:** Using playing cards for an interface, we're going to try to rapidly explore and predict the behaviour of a simulated system. You can volunteer to try the exercise or just sit back and watch, either way you'll learn something about the process of thinking through a testing problem under pressure. It's the sort of exercise you can take back to work and try on your fellow testers.

**Mark Sproson**  
Themis Testing  
Consultancy Ltd.



## **HELIOS: A Slightly Unusual Case Study**

**Abstract:** There's a much-quoted saying to the effect that your project will never come in to specification, within budget and on

time – you can have any two but not all three. In software development finishing on time seems to be the thing we struggle with the most, though looking at other industry sectors this clearly isn't a problem that's unique to us. However, looking slightly further a field it's possible to find projects that routinely come in on time, for the simple reason that they have to, without compromising conformance to specification, and without huge budgetary overspends.

This case-study examines just such a series of projects. With a little imagination, there are surprisingly close parallels to be drawn with many aspects of software projects, particularly in areas such as specification, building project teams, risk assessment, prioritisation, and notably, testing. By looking at differences in approach and attitude, we will consider what insights can be gained to help improve our ability to bring software projects in on schedule.

The presentation will include some practical examples and delegates will be invited to participate in some light-hearted and seasonably suitable exercises.

**Dot Graham**  
Grove Consultants



## **Cognitive Illusions in Development and Testing**

**Abstract:** We are all familiar with optical illusions: we see something that turns out to be not as it first appears. Isn't it strange that some part of our mind knows that another part of our mind is being deceived?

However, we are subject to self-deception in technical areas as well: these are cognitive illusions. This presentation explores some of the ways in which we deceive ourselves and why we do it. Examples are taken from the way Inspection is often practiced, testing issues, attitudes toward complexity, and the way in which "groupthink" can influence technical decisions.

There are a number of ways in which we "turn a blind eye" to issues which are vitally important such as quality and planning. Addressing these issues may help to explain why measurement programmes often fail, why post-project reviews are seldom done, what causes anxiety for developers, managers and testers, and how to counteract a blame culture.

- How our mind plays tricks on us: self-deception
- What is visible and not visible: turning a "blind eye"
- Blame culture: what causes anxiety for developers, testers and managers, and the effects

# Large scale integration testing

Large-Scale Integration (LSI) is concerned with the interfaces between multiple systems and between those systems and the users' business process. Integration is an often-misunderstood concept because the integration process starts almost as soon as coding begins. You could say that integration starts when the second line of code is written – it must be integrated with the first. Integration might be deemed to end when the system is built and installed in an environment with its interfacing systems and you have tested these interfaces. But there is a further, final stage of integration (or at least integration testing) that aims to ensure that the systems as built fit (integrate) with the business processes of the users of those systems.

For example, in an E-Commerce application, the scope of LSI testing might cover the integration with external banks or credit card processing systems, product wholesalers or distributors as well as other, internal systems. The objectives of LSI testing remain consistent even though the technologies and application areas vary considerably.

The notion of "fit" is appropriate for system-system integration and system(s)-business process integration. Most of our acceptance testing projects for clients rely (at least partially) on the results of LSI tests. Using the same integration framework for user acceptance makes test planning easier and business management will support this activity because they can understand how it will give them confidence that the delivered service will work.

It is convenient to split LSI testing into two stages. Systems Integration testing (SIT) is more technically oriented because it is at this point that the physical connections between systems are established and used for the first time. The tests are somewhat more "white-box" oriented in that the physical interfaces between systems must be understood enough to allow test designers to prepare tests that cover them. Business Integration Testing (BIT) is more focused on the paths through business processes to ensure the integrated systems provide seamless support to the user activity throughout.

## Systems Integration Testing (SIT)

To plan SIT, the tester needs to know quite a lot about the physical interfaces between systems. Only by knowing something about the internals, can the tester design tests that will exercise these interfaces adequately.

The tester needs to know:

- The details of the internals of the interface.
- The nature of the system-system dialogs.
- How to exercise the interface from the application user interface or batch processes.
- How to create test data to exercise the interface.
- How to find evidence that the interface works.

One of the problems of LSI testing is that it can be difficult to find details of interfaces. It's not just the interface details that cause problems. It may be that there is no documentation available at all for the legacy systems. In our experience, the LSI test team sometimes has to write the document describing a system's interfaces (at least in summary) as well as the test plan to exercise them.

Evolutif have developed an LSI test methodology over several years experience but the essential LSI test process is straightforward enough. Firstly, Integration Analysis builds up the integration knowledge upon which to base tests on. Systems, manual processes and interfaces are documented in an "inventory" format. The processes and events which trigger data movements are documented as "transaction flows". A transaction flow is much like a flowchart with both business and system processes and the interfaces involved documented together. Once compiled, transaction flows can be used as a basis for test design and coverage measurement.

Once the transaction flows are prepared, the tester follows a familiar process to define the integration tests:

- For each interface, identify the dialogs between systems and which business or system event triggers them to work.
- Derive test cases for success and failure to negotiate each step in the dialog.

- Derive test cases from the interface data validation/use descriptions to ensure valid data is transmitted, invalid data is rejected and that the storage and use of data in each interfacing system reconciles.
- Define your test environment/infrastructure needs early so you get them in good time.

Integration tests tend to be either very simple (often easily automated) or very complicated and executed manually. Early tests tend to focus on the correctness of interface calls. Later, usually automated, tests focus on memory leaks, loss of synchronization between systems and failure and recovery of clients, servers or network.

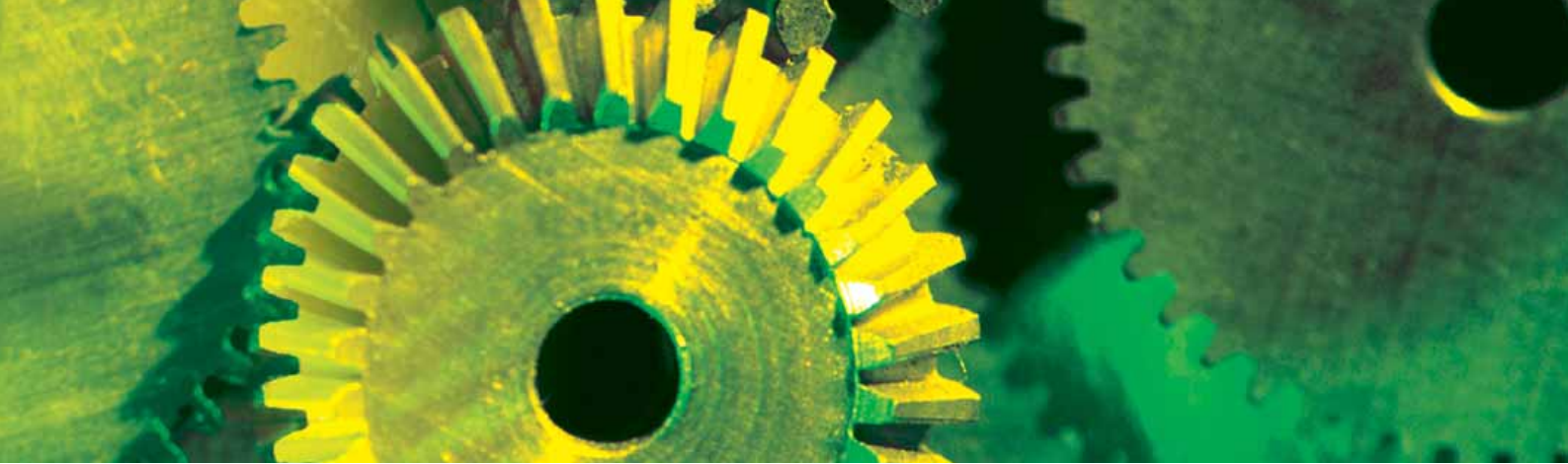
## Business Integration Testing (BIT)

The primary aim of BIT is to provide final confirmation that the systems, processes and people work as an integrated whole to meet an organisation's objectives to provide a sophisticated, efficient service to its customers. BIT takes a process and people-oriented view of the entire system.

Problems encountered during BIT may not be caused by software bugs. Often, the business process itself might need adjustment. Perhaps a new process needs to have rough edges removed; perhaps an existing process needs to change to reflect a new way of doing business. Alternatively, the training provided to end-users might be the problem – perhaps users need more detailed instruction in how to use particular aspects of the system. BIT is a more rounded approach to finding problems in system implementations, which includes software, people and process as a whole.

BIT differs from SIT in that it is more likely to be associated with user acceptance. Assuming that the technical testers have demonstrated that the interfaces between the new system and other systems work in SIT, the imperative for a business wishing to deploy the new system is to ensure the system supports the intended business activity. For example, if a system is intended to support on-line purchase and delivery of books:

- Can a customer search for a book, add it to a shopping basket and place an order?



- Can a customer credit card be validated, payment authorized and processed successfully?
- Does the legacy order processing system receive the on-line order accurately?
- Is the book in stock, located in the warehouse, packed, labelled and dispatched correctly?
- Are "order confirmation", "progress notification" and "thank-you for ordering" email messages sent at the right time? Do they reliably reach the customer?
- Are payments processed promptly, accurately and reliably?
- And so on...

All of these activities need multiple, integrated systems perhaps involving co-ordinated manual processes to work. An isolated

system test can never provide confidence that these things work.

Ultimately, the sponsors of the system want to know whether the new system meets their business goals. Testers must develop and execute selected business scenarios that will exercise the integrated systems and manual processes to provide evidence that they support the business process in its entirety.

Compared with SIT testing, BIT may take a smaller number of test cases to give confidence that the system functions correctly because the number of tests is usually limited to a finite number of business scenarios. But, BIT on its own is not usually enough to base acceptance on. An acceptance strategy normally requires successful completion of system, system integration as well as non-functional tests as appropriate.

### Challenges

A major difficulty in staging LSI tests is that they tend to require the entire technical architecture and coherent data to be set up in the interfacing systems. In large organisations, the legacy systems may be very large and complex and be undergoing enhancements and bug fixing activity in their own right. In large development programmes, multiple project teams may be delivering separate applications to be integrated and tested by a programme integration test team. The development and maintenance teams may be extremely busy. When you ask for support in the implementation of LSI tests requiring interfaces between your test system and theirs, the effort and time required to do this may be significant. You also need the data in their system to be

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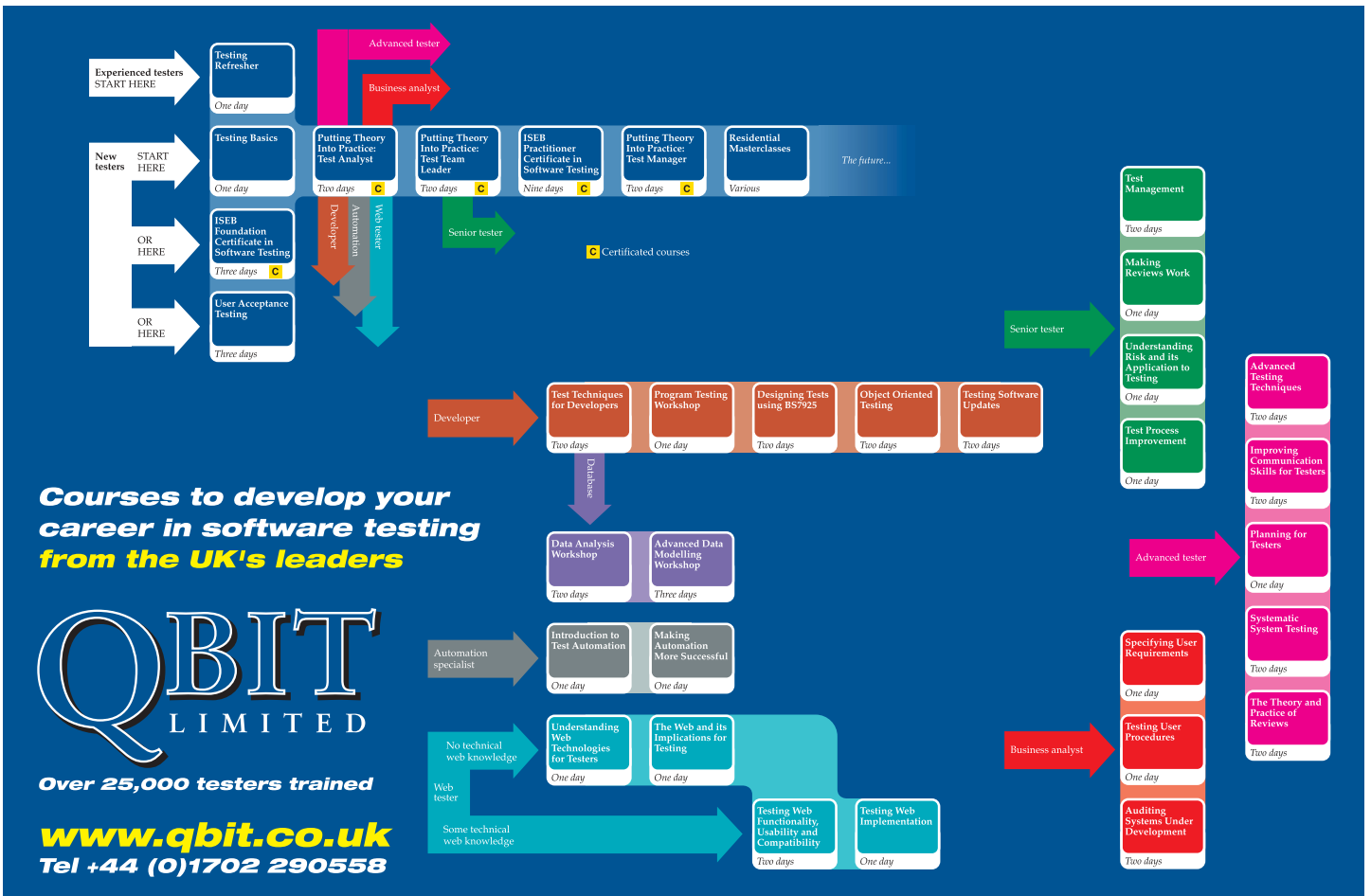
consistent with the data in your own databases but your options may be limited:

- They provide you with an empty database that you have to populate yourself (a task that may be beyond your capabilities or resource).
- They provide you with their own, self-consistent test data that does not match yours (and so could be unusable).
- They provide an extract from production data that may not match selections from other interfacing systems.
- They provide a full copy of production data that is so large it is unwieldy to use for testing.

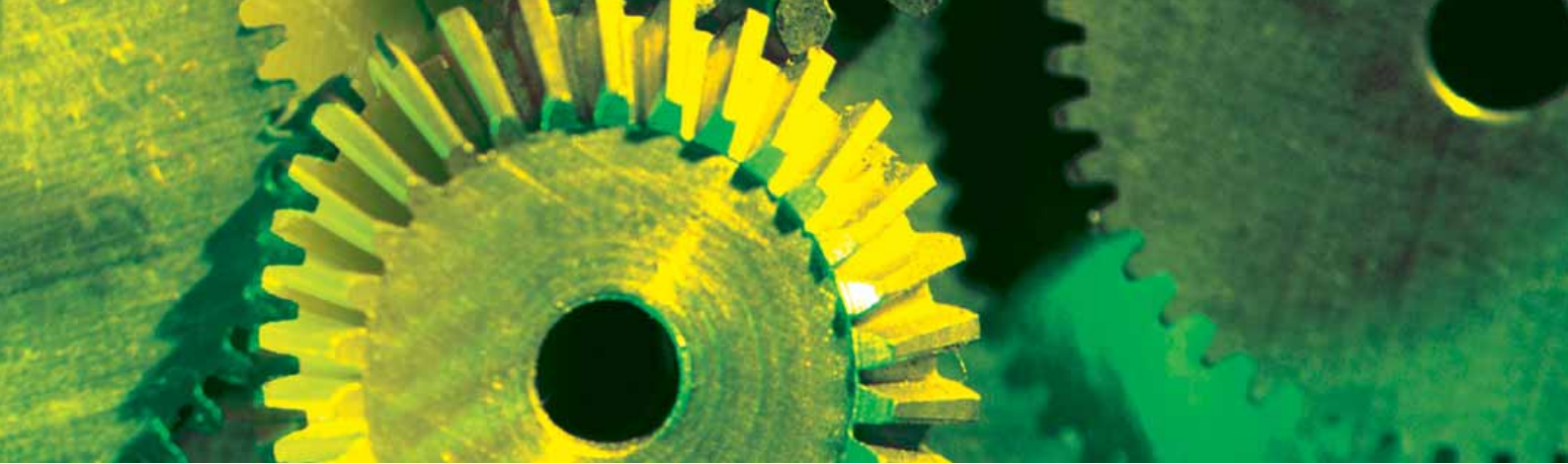
Negotiation for access and interfaces to legacy systems, coherent test data and technical support may be difficult, so it is essen-

tial that these requirements be identified as early as possible in your project so that the plans of other groups and projects can be synchronized with your own. Of course, it is very likely that your plan will have to change to adapt to the pre-existing plans of these other groups. Because of the co-dependency of multiple projects on scarce technical resources, slippage in any of these projects is likely to cause problems. LSI testing often consists of periods of high intensity test execution separated by long waits for environments or technical support to become available. For this reason, LSI testing in large environments benefits from thorough planning and preparation. If your test plans are comprehensive and flexible you will be better able to cope with untimely non-availability of environments and technical staff.

When a new system is written and system tested, the interfaces to other newly developed systems, legacy systems and external systems might all be stubbed out. The system designers would design stubs to simulate these interfaces because interfacing systems might not be available in time for the system test. This is common when development (and system testing) is outsourced. If the system test will take place on the supplier's site, it might be impossible to set up the system-system interfaces on their site. Later LSI testing might be conducted in an incremental way as interfaces become available. The system designers need to think through the build and integration sequence so that firstly, they have stubs for all interfaces that need them and secondly to refine the stubs to do more than make an identical, simple response again and again. If interfaces







are not going to be available until very late in the project, it might be worth building stubs that can simulate an interface in a more realistic way to allow the test designers to prepare more thorough LSI tests. Designers, developers and testers should liaise closely to work out how the build and integration process will work and what level of sophistication needs to be built into the stubs.

LSI testing requires a huge amount of integration knowledge to be acquired but if documented systematically, it can be a key feature of your technical architecture. To justify doing LSI testing, always involve the appropriate technical authority. You might find they will support your efforts because they get a valuable, reusable asset in return.

**Paul Gerrard, paulg@evolitif.co.uk**  
**Systeme Evolutif Limited**

### Advertising in The Tester

The Tester is distributed to the database of the Specialist Interest Group in Software Testing (SIGIST), which is part of the British Computer Society (BCS). With over 2,500 professional testers and IT professionals, we are the largest group of specialist testers and they need to know about your products and services. Additionally the The Tester is downloadable from our web site [www.sigist.org.uk](http://www.sigist.org.uk) and is accessed by IT professionals looking for testing related information.

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## We Three Testers from America Are

Tuesday 9 December 2003 – London Marriott Hotel, Grosvenor Square, London W1

see page one for Conference Agenda

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#### PARALLEL SESSIONS

Please indicate with a tick, one parallel session for each time slot  
(see programme for further details):

11.30	14.00
<input type="checkbox"/> Dot Graham	<input type="checkbox"/> Mark Sproson
<input type="checkbox"/> James Bach	<input type="checkbox"/> Lee Copeland

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I am a vegetarian

I cannot eat: \_\_\_\_\_

#### CPD

The meeting is worth 5 hours CPD  
(Continuous Professional Development)

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