Oak Systems is a boutique *Independent Software Testing* company headquartered in Bangalore, India and has been helping clients globally providing quality software solutions and services. Oaksys is the brainchild of software technocrats with proven track record of managing & executing global software assignments to the satisfaction of clients.

Oak Systems (*Oaksys*) understands and appreciates the need of clients to have better, faster and cost effective solutions to manage their businesses. We bring about right mix of business process knowledge, technical expertise and cutting edge technology to deliver flexible and scalable system to suit current and future requirements through inherent quality culture and process maturity.

Oaksys provides comprehensive Software Quality Assurance and testing services to Software developers as well as the end users of IT solutions. Oak Systems has a proven track record of establishing and running dedicated test labs with disciplined and mature quality processes. Our service capabilities delivered through our "AnyShore" model, can help companies lower costs, improve productivity and increase customer satisfaction.

Our Vision

"Doing the right thing, in the right way, at the right time, within the right budget … the hallmark of Oak Systems"

Oaksys aims to provide unrivalled value to its customers by Quality, competitive and cost effective prices and high standards of service, and ensure that our customers have the service possible.

SOFTWARE QUALITY CHALLENGES

In any software development work Verification and Validation (V&V) is a very critical activity. No matter what development lifecycle is chosen, reviews, testing and other V&V activities form an integral part. In spite of this fact, testing is normally perceived as a low end, unimportant, disposable activity and is considered as a support function.

Experience has shown that when there is insufficient, ineffective V&V and testing of software, organizations are exposed to high risks due to software failures leading to loss of credibility and business.

QUALITY FACTS

- ✓ Cost of Quality is 41% of total project effort (As per benchmarking data published by BSPIN)
- ✓ Defect density is 11 per KLOC (As per benchmarking data published by BSPIN)
- ✓ Testing activity starts with the Requirements phase of the life cycle and ends with software delivery
- ✓ Testing involves – Planning, Design, Development, Execution, Analysis and Correction
- ✓ V&V is identified as PA in the CMMI model

Domains:

• Banking, Financial Services, Insurance
• Embedded,RTOS,Defense, Avionics, Automotive
• Network Management, SAN, DAS, NAS
• Telecom & wireless applications
• Client Server & Web Applications
• ERP, Manufacturing, Gaming Software

People

Attitude does matter. We have a definite positive attitude towards testing and all our 100+ Testers are hard-core testers with a defined career path in testing.

Processes

We are an ISO 9001:2008 certified company. Our processes are approved by CEMILAC (Center for Military Airworthiness and Certification, a DRDO lab, Govt of India). We follow software processes that are tailored from CMMi, DO178B and IEEE standards. We have well-designed customer-focused processes covering the following aspects.

• **Test Governance** – Test project planning – Issue management – Defects management – Service level agreement (SLA) management – Methodology presentation
• **Test Methodology** – Test estimation – Test coverage – Test planning – Test case/script repository – Test calendar repository
• **Test Tools** – Test management – Defect management – Data generation and mining
– Issues management – Configuration management – Automation

Tools

OAKSYS staffers have extensive familiarity in the following environments –

• Unix/Linux, Solaris, Windows, AIX,HPUX
• OS internals, RTOS, TCP/IP
• QTP, Rational,Silk, Selenium, Sahi, RFT
• Insure++, Jtest, TCA, Javascope, Purify
• VB, TTCN-3, C++/C, VC++, Java, Ada
• Oracle Financials, Marshal, SAP, Siebel
• TestCast, XMLSimulator, MATLAB
• LoadRunner, StressTester, RPT
• OpenSTA, Jmeter, SilkPerformer

• PVCS, ClearCase, VSS, QC, BugZilla
• LDRA, Logiscope, RTRT, SoapUIpro
• ASP, HTML, Perl, Tcl/Tk, Python, Ruby
• IIS, Weblogic, Websphere, Tomcat
• Oracle, MySQL, SQLServer,Access,DB2
• Junit, HttpUnit, FlexMonkey, QuickUnit
• Rational Rose, Requisite Pro, UML

Service Delivery Capabilities

Through its expertise in concurrent project execution and remote project management, *Oaksys* delivers services collaboratively while working with geographically dispersed teams located in various time zones.
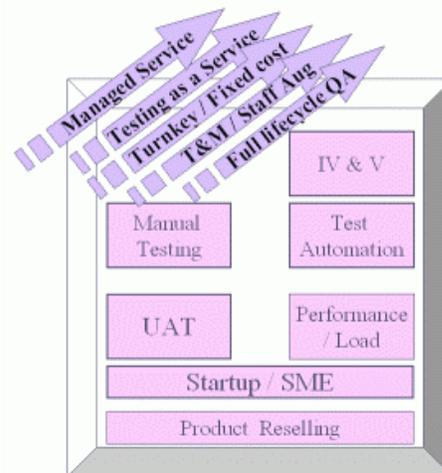
Oaksys specializes in interpreting the user requirements under the FURPS+ model. The functional and non-functional requirements are clearly understood under this model for testability.

Our service offerings cover the Verification & Testing activities associated with the complete Software Development Lifecycle (SDLC) and variety of SDLC models.

Some of the service offerings are detailed below.

Complete V&V Solution

We associate with your development team to build quality into the product right from the beginning of the software development process. Our Independent V&V Group (IVVG) will participate in the reviews of specifications, design, code and testing to assure quality is built-in.

While your engineers develop the software, our IVVG prepares the test plans and test suite. IVVG will take up actual Test Execution and provides the test results and defect analysis. We can start participating in the project from any phase of the lifecycle depending on the project and your needs.

Test Case Design & Test Suite Preparation

We prepare various test plans (Acceptance, System, Integration, Unit) from the software artifacts. We design Tests and develop test cases for the level of testing. Black box, White box and Grey box techniques are applied to identify test cases, as applicable.

The tests can be designed for Functionality, Load/Performance, Usability, Portability, etc.

Test Automation Architecture, Design & Development

Automated testing gives much quicker turn-around and drastically reduces the time to deliver the product out of the door.

We define, design and develop automated test environment with and without off-the-shelf test tools. Depending on the characteristics of the project and your preferences, a right mix of test toolsets will be chosen.

Test Execution

From setting up the complete environment for Testing, we execute tests manually or by using automated tools. The test results will be compiled, analyzed and submitted to you.

Software Evaluation and User Acceptance Testing

Whenever a customer gets software developed from a third party vendor, it is critical for the customer to evaluate the software before signing off. On behalf of our customers, we can evaluate/carry out acceptance testing of the software for FURPS+ goals. We can verify correctness and completeness of associated documents and other work products.

Traceability Analysis

When software development progresses from one phase to the next, it is important to ensure correctness and completeness of the phase deliverables to its predecessors. We can take up this kind of traceability analysis between different work products in the software project.

Reviews & Inspections

We conduct formal technical reviews of various software documents. We are well versed with Fagan inspections, walkthroughs and other Peer Review processes.

From our experience with a variety of global clients we can justifiably and proudly say, *"Whenever we have consulted we have produced amazing results on the assignment and also introduced a compensating culture, which greatly increases the probability of success".*

Engagement Models

We can be your *Test partners* in multiple ways. Our flexible and adaptive engagement models are designed to suit your business model. The following few engagement models are indicative and can further be adapted to fit into your specific business model.

Offshore Testing Centre (OTC)

Oaksys will setup a full-fledged offshore testing center for you at our premises and dedicate resources for you to take care of all your Testing needs. A well-established onsite-offshore delivery model to provide reduced costs and risks while maintaining required

service quality levels would be setup. The center can be jointly managed with you.

Managed Testing Service

Oaksys Managed Testing Service (OMTS) will enable you to focus on your core activities while we take care of your QA activities. We commit to the deliverables and their schedules. Under this Managed Service, we will operate the testing activities for a defined duration till your product is stabilized. We will then transfer the operations back to you to manage along with the existing team.

Testing as a Service (Pay-per-Use)

Oaksys will provide any of the testing services as needed by you, onsite - at your project location, or offsite - from our location forming part of your core project team. This will be a 'size based' billing model where you will need to pay us only for the extent of work carried out by us.

Turnkey/Fixed-Cost model

When the scope of the work is clearly defined, we estimate the size and effort involved in carrying out the activities. In such a case, we can provide a turnkey – fixed cost solution to the requirements. Oaksys can carry out the work either at your premises or at its own labs depending on the mutual agreement.

- **Outsource-onsite**: We will take-up the testing activities on a fixed cost – fixed scope basis and execute the project onsite at your premises.
- **Outsource-offsite**: We will take-up the testing activities on a fixed cost – fixed scope basis and execute the project offsite at our premises.

T & M model

Oaksys can provide the testing services with its complete team or as part of your test team. You will be charged on 'actual effort' basis. The work location could be onsite at your location or offsite at our labs.

- **Staff T&M model**: We can provide our experienced and well-trained testers for the project duration on a person-month billing basis.
- **Team T&M model**: We can provide a full-fledged team comprising of test leads/managers, test

designers, manual testers and automation engineers on team-month billing basis.

A note on Outsourced Testing

For a variety of reasons testing rarely receives the seriousness, planning, strategy, review and management attention required. Developers double up as testers and test their own code, so the objectivity of the process is lost leading to a drop in productivity. Testing also involves large investment on automation tools, which are not always available. In order to reduce cost, software companies tend to invest less in people and/or tools that results in loss of focus in product development.

To all the above, Outsourcing is proven to be the best solution. Companies need to realize that investing in independent testing is not just an IT decision, but a business decision, that affects the entire organization.

Testing lends itself very well to the outsourcing model with tangible benefits. Software companies that would like to focus upon their core competencies instead of investing in & building teams that force them to shift focus, address this situation via outsourcing. The client has the flexibility of drawing resources with requisite skills as demanded by the situation, and does not have to carry the overhead of planning or staffing.

Our Research Programs
[OAK Centers of Excellence]

Oaksys is active in the IT industry with its innovative and constructive approach towards Software Testing. As an active participant in numerous Testing initiatives, *Oaksys* believes in sharing its experience and expertise in QA/Testing among the IT professionals and academicians. To this effect, *Oaksys* has initiated first of its kind research program as an industry-academic initiative and setup **Centers of Excellence** in Software V&V and Testing with **three** of the premier

Engineering Schools of Karnataka (at Bengaluru, at Hubli and at Gulbarga).

The main objectives of these research centers are –

1. To carry out research in Software V&V on new approaches, quality models, tools etc.
2. To build a metrics repository for industry benchmarking and analysis
3. Popularize software V&V, SQA and testing topics among the professionals through seminars, training, workshops and conferences
4. To evolve testing tools, techniques and develop expertise for state-of-the-art technologies such as Avionics, Telecom and networking.

Our Competency Development Programs

Oaksys facilitates induction of new talent and updates the skills of its testers through training and other interventions in order to meet the ongoing and future demands of the business.

Talent Induction

The OAKSYS Induction Training Program (OITP) enables quick and seamless induction of new professionals into *Oaksys*. OITP is to give entry level Software Testers a fundamental grasp of Software Testing principles. The OITP is a comprehensive learning program and provides customized training in software Engineering and Testing with exposure to multiple technologies, domains and platforms. The OITP transforms the new hires into qualified test professionals with right conceptual background and positive testing attitude.

Continuous Learning

It goes without saying that *Oaksys* employees constantly update their knowledge. OAKSYS Competency Development Program (OCDP) addresses the continuous learning necessitated by the project requirements as well as career growth requirements. The OCDP addresses competency development needs in technology and domain areas.

OAKSYS Knowledge Repository (OKR) covers a wide-ranging set of topics that gives employees all kinds of opportunities to continually develop and keep pace with the industry trends. *Oaksys* has realized the importance of personal development of employees being very closely linked to the development of the company.

Our Experience

Oak Systems, being a horizontal organization, has vast experience on a variety of platforms, tools and domains. Our experience enables us to quickly internalize the domain and apply the right approach with positive attitude to detect the product defects.

Partial Client List

- Aeronautical Development Agency (DRDO Labs), Govt. of India
- ANZ Information Technology
- BMC Software India
- CEMILAC (Center for Military Airworthiness and Certification)
- Dell International Services
- eCredit.Com
- General Electric (GE) India Technology Center
- First Apex Technologies
- Hewlett-Packard India Software Operation
- IBM Global Services India
- India Life Hewitt
- Infosys Technologies
- LG Soft India
- LRDE (DRDO Labs)
- MPhasis
- Oracle Financial Services (iFlex Solutions)
- PeopleClick Authoria
- Symantec (Veritas)
- Wisor Telecom
- Yodlee Inc., USA
- Zyme Solutions

and number of SMEs and startups

Oak Systems Private Limited
#27, NGEF Lane, Off 100 Feet Road,
Indiranagar 1st Stage, Bengaluru – 560038 INDIA
Tel : +91-80-4126 7681 **www.oaksys.net**