Software Quality Assurance & Test Automation

$\mathcal{U}$TC Associates, Inc. (UTC) is a solutions-based professional services company focusing on all key aspects of complex network planning, designing, testing, and implementation, as well as on the ongoing operations of your network.

UTC Software Quality Assurance & Test Automation

UTC supports all facets of software quality assurance from function testing, performance testing, usability testing, system testing, regression testing to test automation.

According to Aberdeen Group, an independent industry analyst, 90 percent of all IT projects are delivered late, and manual testing is a major factor to delays.

UTC maintains a library of scripts and standard tools to conduct automated testing for:

•GUI Testing

•Regression Testing

•Unit Testing and Component Testing

•Black Box / Glass Box

•Change Management / Configuration Management
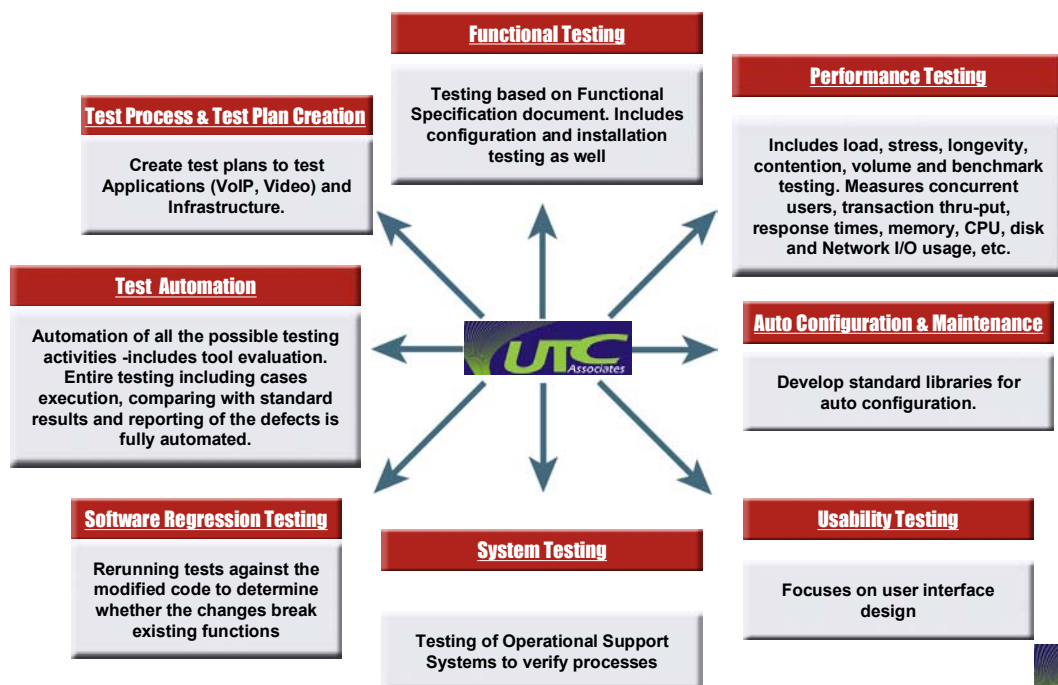
Challenges with Integration
Integration faces many challenges including:

1. Various versions of disparate systems introduce complexity of testing affect of adapters.

2. Testing New features and impact to system test and importance of regression testing

3. Load testing / Stress testing. Determining bottlenecks and total throughput (transactions/sec). Multiple servers / applications add complexity.

4. Inter-process communications between systems.
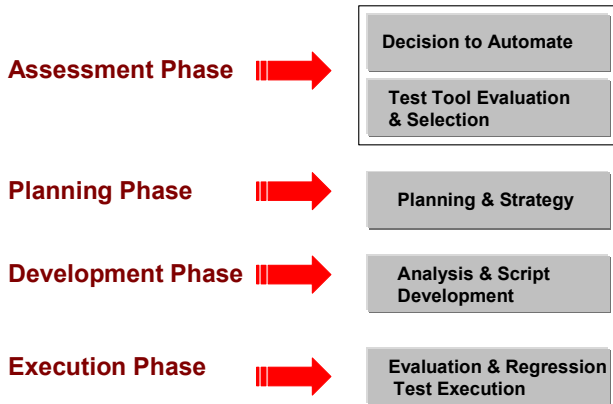
Benefits of Test Automation

In order to mitigate the challenges and risks associated with Integration, UTC provides test automation. This has the following advantages.

•**Faster Execution -** Test automation enables one to achieve detailed product testing with significant reduction in test cycle time.

•**More Defects Found Earlier -** As compared to manual testing

•**Formalized Process & Consistency -** Automated testing offers a level of consistency, which is not achievable through use of manual testing.

•**Reusability -** Automated test scripts are re-usable and can be used across varying scenario's and environments.

Enhanced productivity - Automation eliminates many of the mundane functions associated with regression testing.

Functional Testing
Testing based on Functional Specification document. Includes configuration and installation testing as well

Test Process & Test Plan Creation
Create test plans to test Applications (VoIP, Video) and Infrastructure.

Performance Testing
Includes load, stress, longevity, contention, volume and benchmark testing. Measures concurrent users, transaction thru-put, response times, memory, CPU, disk and Network I/O usage, etc.

Test Automation
Automation of all the possible testing activities -includes tool evaluation. Entire testing including cases execution, comparing with standard results and reporting of the defects is fully automated.

Auto Configuration & Maintenance
Develop standard libraries for auto configuration.

Software Regression Testing
Rerunning tests against the modified code to determine whether the changes break existing functions

System Testing
Testing of Operational Support Systems to verify processes

Usability Testing
Focuses on user interface design

UTC Methodical Approach

UTC has created a methodical approach to test automation from initial assessment to tool selection, test case/script development to execution.

Assessment Phase ➡	**Decision to Automate**
	Test Tool Evaluation & Selection
Planning Phase ➡	**Planning & Strategy**
Development Phase ➡	**Analysis & Script Development**
Execution Phase ➡	**Evaluation & Regression Test Execution**

UTC Software Tool Experience

UTC is experienced with the following commercial tools

Rational, Mercury, Segue, Radcom, Emprix, Solstice and Compuware as well as open source Java tools.

Automated Regression Testing

One of the impacts of automation is seen in regression testing. As software release cycles for software grow shorter and the number of tests in your regression test suite is growing larger, it becomes impractical to perform complete manual regression testing with each release.

One of the risks of incomplete regression testing is that side-effect defects from introduction of new functionality or bug fixing go undiscovered prior to release.

By automating regression testing, one can reduce the time required to run the full suite from days or weeks to a matter of hours, leaving more time to focus on of new code and on areas of highest risk.

Automated Integration Testing

UTC approach to Integration Testing is to use a combination of Black Box and Glass Box Testing.

Black Box Testing

In this approach, testing is focused on whether the system meets its functional specifications. Testing is assumed that the end user does not have any knowledge of the inner workings of the system and the system is treated as a "Black Box" with defined inputs and predictable output.

Glass Box Testing

In addition to the Black Box approach, UTC takes into account that having indepth knowledge of the system allows for testing of boundary cases as well as unique cases that may not have been observed in functional testing.

Black-box testing is good at functional testing whereas as Glass-Box testing is good in finding implementation flaws.

Automated Load / Stress Testing

UTC provides testing of systems under ideal as well as normal and extreme cases. UTC provides load, stress, longevity, contention, volume and benchmark testing.

End to End Testing – Network + Application Testing

UTC provides end-to-end testing and validates operation. Interoperability testing is performed to conform that the network service configuration is supported with the application UTC services include:

• Performance Testing

• Features & Functionality

• Fault & Redundancy

• Network Management

UTC testing goes beyond functional testing and includes aspects such as user-interaction, operational factors, and determines whether it fits the technology and business objectives of the client.

For additional information
Contact: sales@utcassociates.com
Tel: 917-415-9668

UTC Associates

82 Wall Street

Suite 702

New York, NY 10005