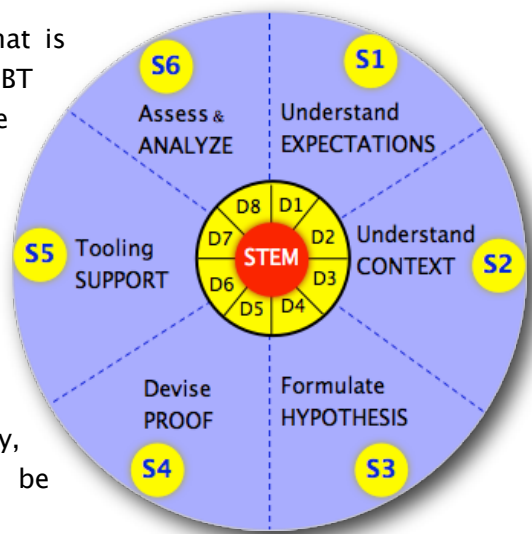


## Delivering clean software is challenging.

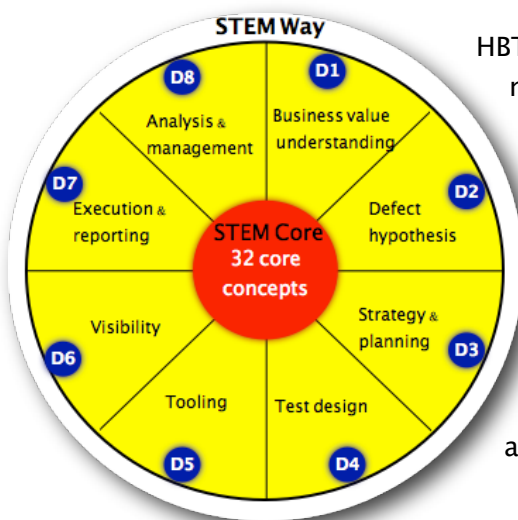
The act of producing clean software is challenging. In other disciplines of engineering, the final artifacts are physical in nature and therefore assessment of quality (or cleanliness) is accomplished by validating the physical behavior. Software however poses an interesting challenge as expectations in the mind are translated into non-physical entities (code) whose behavior needs to be assessed for correctness. Incorrectness i.e lack of quality is not limited to flaws in code, but occur due to inappropriate design, incorrect understanding of intentions, complex interactions due to the deployment environment and finally due to interesting usage by the end users.

### HYPOTHESIS-BASED TESTING

Hypothesis-based testing (HBT) is a test methodology that is unique in its approach to ensuring cleanliness of software. HBT is a goal-centered methodology wherein the goal of software cleanliness is set up (i.e. collection of cleanliness criteria) and then potential defect types that can impede the cleanliness criteria identified, and then perform activities to ensure purposeful testing that is indeed effective and efficient. The central theme is constructing a hypothesis of potential defects that may be probable, and then scientifically proving that they do not indeed exist. The activities relate to formulating a scientific test strategy, designing test scenarios and cases that are proven to be adequate and then automating them as appropriate.



HBT is based on sound engineering principles geared to deliver the promise of guarantee of cleanliness. It allows you to engineer a staged detection model to uncover the defects faster and cheaper than the other typical test methodologies.



HBT is a personal test methodology that fits any development methodology and weaves into your organizational test process. HBT is powered by STEM™ (STAG Test Engineering Method) a set of disciplines and a scientific core. STEM™ provides the foundation for scientific thinking to perform the various activities. It consists of a personal scientific inquiry process that is assisted by techniques, principles and guidelines to decompose the problem, identify cleanliness criteria, hypothesize potential defect types, formulate test strategy, design test cases, identify metrics and build appropriate automation.

# HBT SERIES OF WORKSHOPS

## HBT AND OTHER TEST METHODOLOGIES

The typical test methodologies in vogue have relied on strength of the process and the capability of the individual to ensure high quality in the given cost and time constraints. They lack the scientific rigor to enable full cost optimization and more often rely on automation as the means to driving down cost and cycle time. For example, they do not provide a strong basis for assessing the quality of test cases in terms of their defect finding potential and therefore improve effectiveness and efficiency.

HBT on the other hand enables you to set a clear goal for cleanliness, derive potential types of defect and then devise a “good net” to ensure that these are caught as soon as they get injected. It is intensely goal-oriented and provides you with a clear set of milestones allowing you to manage the process quickly and effectively.

## TARGET AUDIENCE

The HBT series of workshops address the entire spectrum of software development cycle spanning from understanding customer expectations to test automation. There are specialized workshops that cover the entire test lifecycle like strategy and planning, test design, load and performance testing.

The target audience for the HBT series spans developers, test engineers, test leads and managers, project managers and SEPG (Software Engineering Process Group).

The later sections describes these workshops in detail and the target audience they address.

## DELIVERY AND LEARNING MODEL

All the workshops are instructor-led workshops. All workshops employ an application-oriented learning model, wherein the various concepts are illustrated by applying this on a real-life but scaled down problem. In addition, all workshops involve participation of the audience in problem solving by working in teams. Some of the workshops have built-in evaluation pre and post workshop to assess assimilation.

The class exercises can be customized to meet the domain requirements of an organization. For customization, the organization is expected to give us their domain specific problem to be used, along with suitable explanation to enable us to create a custom worked example for illustration in the class.

# HBT SERIES OF WORKSHOPS

## HBT SERIES OF WORKSHOPS

STAG has developed various workshops focussed on test engineering and and have trained over 3000 professionals across 50 companies. All the workshops are based on the HBT methodology that is powered by STEM™.

ID	Workshop Name	Duration	Overview
HBT. 1	HBT – An engineering approach to producing clean software	4 days	This spans the full TLC outlining the scientific approach in detail covering all aspects of TLC.
HBT. 2	Rapid understanding of customer expectations	1 day	Focuses on how to rapidly understand expectations/requirements of the software to be validated in a scientific manner.
HBT. 3	Purposeful test strategy and planning	2 days	Focuses on how to devise a strategy that is goal-focused using a systematic and scientific approach.
HBT. 4	Practical test effort estimation	1 day	Practical effort estimation based on the defects hypothesis and therefore figuring scenarios, types of tests and levels of tests and automation support needed.
HBT. 5	Robust test design	2 days	Designing test scenarios/cases that can indeed proven to be sufficient and adequate.
HBT. 6	Devising meaningful measurements	1 day	Goal oriented approach to designing and implementing a measurement system.
HBT. 7	Result oriented automation	2 days	A business oriented approach to understanding automation objectives and a SW development oriented approach to building effective and result oriented automation.
HBT. 8	Intelligent regression testing	1 day	Understanding aspects that help in optimizing regression tests.
HBT. 9	Effective review of test strategy/plan	1 day	Assessing effectiveness of strategy/plan based on the goal-focused approach to strategy formulation.
HBT. 10	Effective review of test cases	1 day	Assessing effectiveness, completeness, consistency and future automation-ability of test cases.
HBT. 11	Effective developer testing	2 days	Enabling the typical developer to focus on what types of defects to catch and an effective and efficient means to detect them.
HBT. 12	LSPS testing (Load, Stress, Performance & Scalability)	2 days	A systematic approach to assessment of load, stress, scalability and performance aspects of system.
HBT. 13	RRE Testing (Robustness, Reliability & Endurance)	1.5 days	A systematic approach to assessment of robustness, reliability and endurance aspects of the system.

# HBT SERIES OF WORKSHOPS

## TARGET AUDIENCE AND SDLC/TLC PHASE FOCUS

Each workshop in the HBT series are targeted at a specific SDLC (Software Development Lifecycle) / TLC (Test Lifecycle) that addresses the need of a specific role of engineering staff. The tables below depict the target audience and the phase of SDLC/TLC for each workshop in the HBT series.

WORKSHOP FOCUS BY TARGET AUDIENCE							
DEV-Developer   TE- Test Engineer   TM-Test Manager   TL - Test Lead   PM - Project Manager   SEPG-Process Staff   TA - Test Automation Staff							
ID	Workshop Name	DEV	TE	TL/ TM	PM	SEPG	TA
HBT.1	HBT - An engineering approach to producing clean software	■	■	■	■	■	
HBT.2	Rapid understanding of customer expectations		■	■	■		
HBT.3	Purposeful test strategy and planning			■	■		
HBT.4	Practical test effort estimation			■	■		■
HBT.5	Robust test design		■	■			
HBT.6	Devising meaningful measurements			■	■	■	
HBT.7	Result oriented automation						■
HBT.8	Intelligent regression testing			■			
HBT.9	Effective review of test strategy/ plan			■	■		
HBT.10	Effective review of test cases		■	■			
HBT.11	Effective developer testing	■					
HBT.12	LSPS testing (Load, Stress, Performance & Scalability)		■	■			
HBT.13	RRE Testing (Robustness, Reliability & Endurance)		■	■			

WORKSHOP FOCUS BY SDLC/TLC								
SDLC/TLC stages  DVP-Development   UNS-Understanding   SP-Strategy & Planning   TD-Test design  RVW-Review   TA-Automation   TM- Test management								
ID	Workshop Name	DVP	UNS	SP	TD	RVW	TA	TM
HBT.1	HBT - An engineering approach to producing clean software	◆	◆	◆	◆	◆	◆	◆
HBT.2	Rapid understanding of customer expectations		◆					
HBT.3	Purposeful test strategy and planning			◆				
HBT.4	Practical test effort estimation			◆				
HBT.5	Robust test design				◆			
HBT.6	Devising meaningful measurements			◆				◆
HBT.7	Result oriented automation						◆	
HBT.8	Intelligent regression testing			◆	◆			
HBT.9	Effective review of test strategy/ plan					◆		
HBT.10	Effective review of test cases					◆		
HBT.11	Effective developer testing	◆						
HBT.12	LSPS testing (Load, Stress, Performance & Scalability)		◆	◆	◆			
HBT.13	RRE Testing (Robustness, Reliability & Endurance)		◆	◆	◆			