

Glossary

Glossary

Terminology used across the javai project family. Terms are defined in the context of the distributional contract methodology; framework-specific annotations and APIs may vary by implementation.

Term	Definition
Baseline Selection	The process of choosing the most appropriate baseline for a p
Compliance Testing	Verifying a system meets a mandated threshold (SLA, SLO, p
Conformance Testing	Detecting when performance regresses below an empirically
Confidence	Probability of a correct verdict; equals 1 minus the false posi
Confidence-First Approach	User specifies confidence + power + minDetectableEffect; fr
Contract Reference	Human-readable string identifying the document or clause de
Covariate	A contextual factor that drives variance in system behavior. C
Covariate Category	Classification of a covariate by its nature: temporal (time-bas
Covariate Conformance	The degree to which a test's covariate values match those of
Covariate Profile	An immutable record of covariate values captured at a specif
Duration Constraint	A timing requirement in a service contract specifying the ma
Effect Size	The minimum degradation the test is designed to detect (sam
Empirical Baseline	Machine-generated record of observed behavior from a meas
Execution Specification	Human-approved contract derived from baselines, typically s
Experiment	A controlled execution of a use case to characterise system b
Experiment Configuration	One concrete combination of factor levels — the unit of execu
Experiment Design	Declarative description of what is explored (factors + levels).
Explore Experiment	Experiment mode that compares multiple configurations with
Factor	One independently varied dimension in an explore experimen
Factor Level	One setting of a factor (categorical or numeric).
False Negative (Type II Error)	A test pass when the system has degraded.
False Positive (Type I Error)	A test failure when the system has not degraded.
Feasibility Gate	Pre-execution check that determines whether the configured
Footprint	A stable hash identifying the combination of use case identity
Input Source	A mechanism for providing test inputs (from a method, file, o
Instance Conformance	Validation that actual results match expected values from a g
Measure Experiment	Experiment mode for precise estimation of one configuration
Minimum Detectable Effect	Smallest drop from baseline worth detecting; required for the
Minimum Pass Rate	The threshold pass rate the system must meet to pass the tes
Normative Threshold	A threshold origin that represents a requirement (SLA, SLO,

Term	Definition
One-Sided Lower Bound	Statistical threshold below which the true success rate is unlikely to be exceeded.
Optimize Experiment	Experiment mode that iteratively tunes a single factor to find the best configuration.
Parameter Triangle	The three interdependent parameters in probabilistic testing: sample size, threshold, and confidence.
Power	Probability of catching a real degradation; equals 1 minus the probability of a false negative.
Provenance	The chain of artefacts from definition to enforcement, ensuring that a test is applied as intended.
Regression Threshold	Statistically-derived minimum pass rate for regression tests, used to detect performance regressions.
Sample	A single execution of the system under test.
Sample Size	Number of test executions; controls cost and time. Part of the parameter triangle.
Sample-Size-First Approach	User specifies samples + confidence; framework computes a threshold.
Sentinel	A lightweight runtime agent that evaluates the distributional characteristics of test results.
Service Contract	A formal definition of what "success" means for a use case. Internal to the system.
SLA (Service Level Agreement)	Contractual commitment to external customers defining minimum service quality.
SLO (Service Level Objective)	Internal target for service quality, often more stringent than the SLA.
Statistical Power	The probability of correctly detecting a real degradation (1 - probability of a false negative).
Test Intent	Declares the developer's intent for a probabilistic test: verification, regression, or discovery.
Threshold-First Approach	User specifies samples + threshold; framework computes a confidence level.
Threshold Origin	Classification indicating the origin of a probabilistic test's threshold: regression, SLA, or SLO.
Threshold Provenance	Metadata documenting where a test's threshold originated and its associated confidence.
Use Case	An artefact defining a service operation and its service contract.
Use Case ID	A unique string identifier for a use case (e.g., shopping.product.view).
Wilson Score Bound	Robust confidence bound for binomial proportions. Used for regression testing.