



Smart Automated Validation of Cockpit Display ECUs & Connected Services

KITE is KPIT's solution for automated validation of HMI/Display oriented ECUs along with the connected devices and connected services. KITE validates the ECU either individually or in an integrated manner with multiple other cockpit and non-cockpit (ADAS ,Body control etc.) ECUs .

KITE's intuitive codeless automation using function blocks enables up to 5x increase in engineering productivity, high reusability of test assets within and across programs and thus upto 50% reduction in TCO.

KITE is currently being used in validation of 20 production program across IVI, Cluster, HUD & RSE

Re-Imagine your automated validation with KITE for higher productivity, increased quality, reduced cycle-time and reduced cost.

Features



Multi-domain Automated Validation



Codeless Automation Using Function Blocks



Drag-Drop Test Case Development



Cloud Based Test Assets



Remote Execution & Monitoring



Dashboard & Reporting

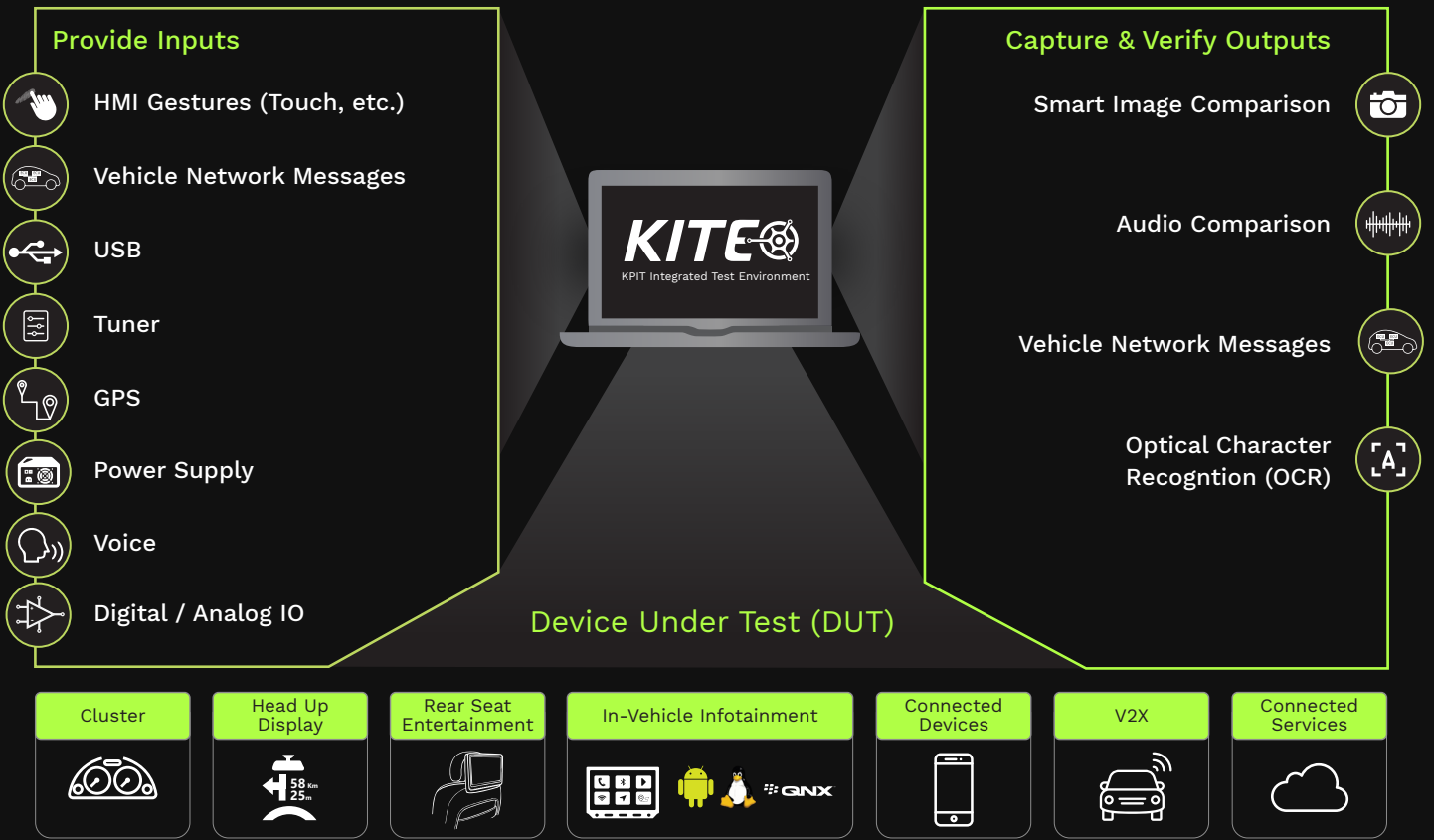
Benefits

Increase Engineering Productivity by up to **5X**

Increase Automation Coverage by up to **95%**

Reduce Total Cost of Ownership by up to **50%**

Automation by KITE



KITE Application User Interface

The screenshots show the KITE Application User Interface. The top screenshot displays the 'Test Center' window with the following components:

- Function Blocks:** A tree view on the left showing repositories like Infotainment, HMI, Audio HMI, etc.
- Test Cases:** A list of test cases under the 'Vehicle Settings HMI' folder.
- Test Case Folders:** Hierarchical folders for organizing tests.
- Test Pack Under Execution:** The 'SANITY TESTING' pack is highlighted.
- Execution Status:** A table showing test results with columns for Name, Run DB, Iteration, Execution Date and Time, and Percent Complete. It includes a progress bar and status indicators (red, green, yellow).




















The bottom screenshot shows the 'Test Report' window for 'Test Pack : BVT_Image_Comparison : Iteration_1'. It includes:

- Execution Report Summary:** A summary table and a pie chart showing the distribution of test results: Passed (85.59%), Failed (14.41%), and Not Executed (0.00%).
- Execution Report Details:** A detailed table of test cases with columns for Test Pack, Iteration ID, Text ID, Test Objective, Start Time, End Time, Total Time, Results, and View Results.

KITE Features

Installation Platform Requirements	Microsoft™ Windows 8 (64 bit) and above JVM Version 8 and above
Validate ECUs	Infotainment, Clusters, Rear Seat Entertainment, Heads Up Display, Connected Devices & Connected Services Single ECU / Multiple ECUs Integrated together
Type of Testing	Functional Testing / Stability Testing / System Integration Testing
DUT OS Supported	Android / Linux / QNX

KITE Automation Features

Automation Area & Scenarios	
Touch Inputs	Linux / QNX / Android (ADB) / Robot 
Screen Capture	Linux / QNX / Android (ADB) / Camera / Frame Grabber (HDMI, LVDS) 
Screen Validation	Full screen / Selected ROI(s) / Images / Animations / Flashing Tell-tales / Gauges / Text / Languages 
Vehicle Network	CAN / LIN / MOST 
Vehicle Network	Ethernet / Flexray / Rest Bus Simulation 
Network Adapters	Vector / NeoVI / MOCCA / PeakSys 
USB Devices	Insert / Remove / Switch Devices 
Connected Devices	Android / Apple devices 
Tuner	Real or simulated signals for AM / FM / XSM / HD / RDS / TMC 
Audio & VR	Voice commands & prompts / music / chimes 
Navigation	Route with start, stop & halt points 
Power	Low/high voltage, Battery ON/OFF & Wave Forms 
Digital / Analog IO	Hard keys / Rotary Knobs 
Digital / Analog IO	Sensors / PWM 
Camera	RVC / SVC / other cameras 
Connected Services	REST APIs / web applications / phone applications 
Others	Desktop application / custom scripts on DUT or on KITE PC 
 Supported Features  Planned Features	

Other KITE Features

Feature	Description
Codeless Automation	Provides Function Blocks & drag drop based UI to develop test script
Test Assets Storage	Stores test assets on Cloud
Remote Execution & Monitoring	Web portal* or Mobile application
Reporting	Step wise execution reports in HTML, PDF & XML formats
Logging	Captures standard (DLT, Logcat etc.) & custom logs Records video logs
Version Control	Create/Compare/Merge/Load different versions of test cases
ALM / PLM Integration	Traceability with Test Cases & Defects. Supports custom & standard tools like JIRA, Redmine, DOOR* etc.
CI/Build System	Integrated with Jenkins. Custom tools can be supported
Stability Testing	Auto randomizes test execution to discover hidden defects Auto detection & recovery from crashes, hangs etc. on DUT to ensure continuous unattended execution
3rd Party Test Solutions Integration	Invoke / orchestrate Vector VT / CANOe scripts