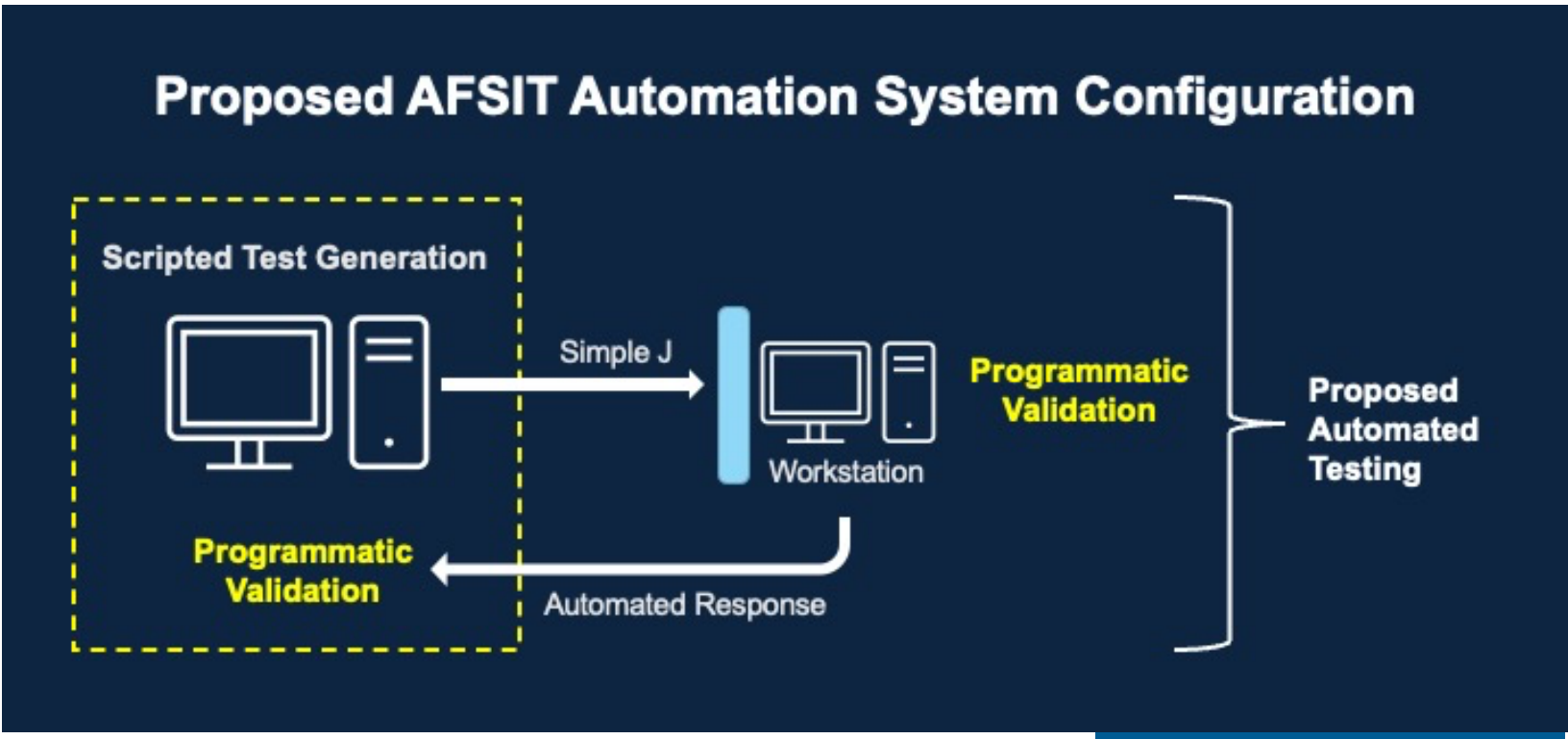
Automated Test Framework



MITRE's automated testing framework rapidly and automatically performs large volumes of system development testing, thus accelerating a standard interoperability process that aligns with emerging agile development methodologies.

Automated Testing Benefits

The requirements associated with critical system development call for extensive testing. Typically, only a few functional tests are run during development and formal testing. This can result in situations where corner cases fail. Also, faults corrected after initial testing can fail in unforeseen ways during subsequent tests. Multiple test cycles may be required to pass acceptance testing, leading to rework, cost increases, and schedule delays.

The goal of automated testing is to expose anomalies early in the development cycle through frequent testing before a formal test event. Automated testing removes the human-in-the-loop time requirements and reduces traditional testing costs. It also increases repeatability, identifies deficiencies that may be missed by standard testing, and speeds up system fielding.

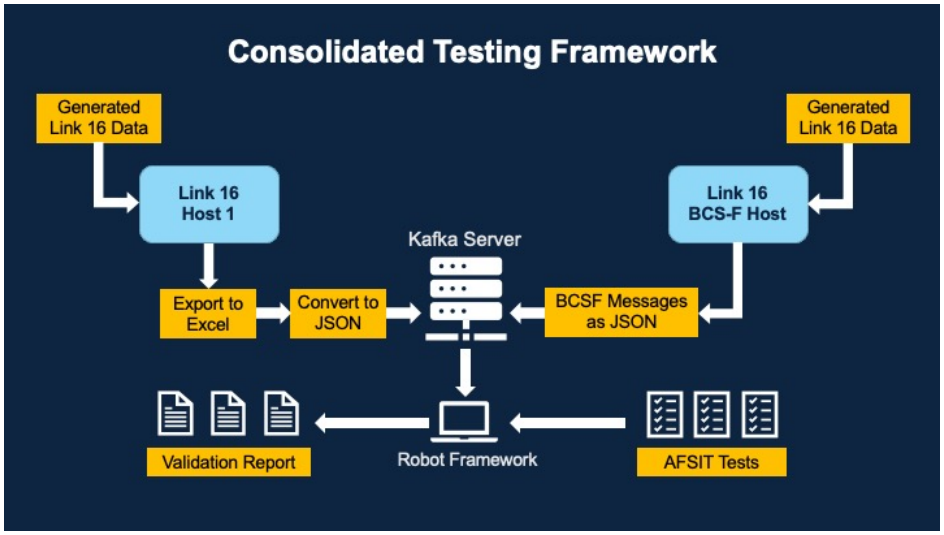
Test early and often. Find the issues before formal acceptance testing.

MITRE

Automated Test Framework

Automated Air Force System Interoperability Testing (AFSIT)

MITRE's automated test framework has been applied to the extensive Military Standard 6016 tactical data link run during formal AFSIT certification testing. The framework integrates with the system under test and programmatically validates test results. Those results and their supporting data can then be exported to a human-readable report.

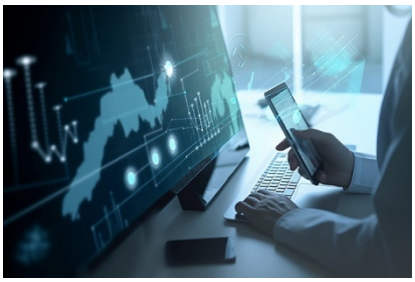


The framework generates the Link 16 test messages. The T-Plan scripting tool can mimic user input as required for each AFSIT test. Data messages generated during the tests are sent to a Kafka server (open-source distributed event platform) for later validation. Finally, the validation is performed by each step in the AFSIT test against the test data using the open-source Robot Framework. The time required for the entire process (execution, analysis, and reporting) can be reduced from days to hours or even minutes, depending upon complexity. The final product is a text file and web-based report.

For information about MITRE's Automated Test Framework, contact isee@mitre.org. For more information about MITRE, visit mitre.org.







Related Technologies

- Apache Kafka
- Robot Framework
- T-Plan Robot

MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government and in partnership with industry to tackle challenges to the safety, stability, and well-being of our nation.

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