Visualizing Project Health
DAC BoF

Achilles Test

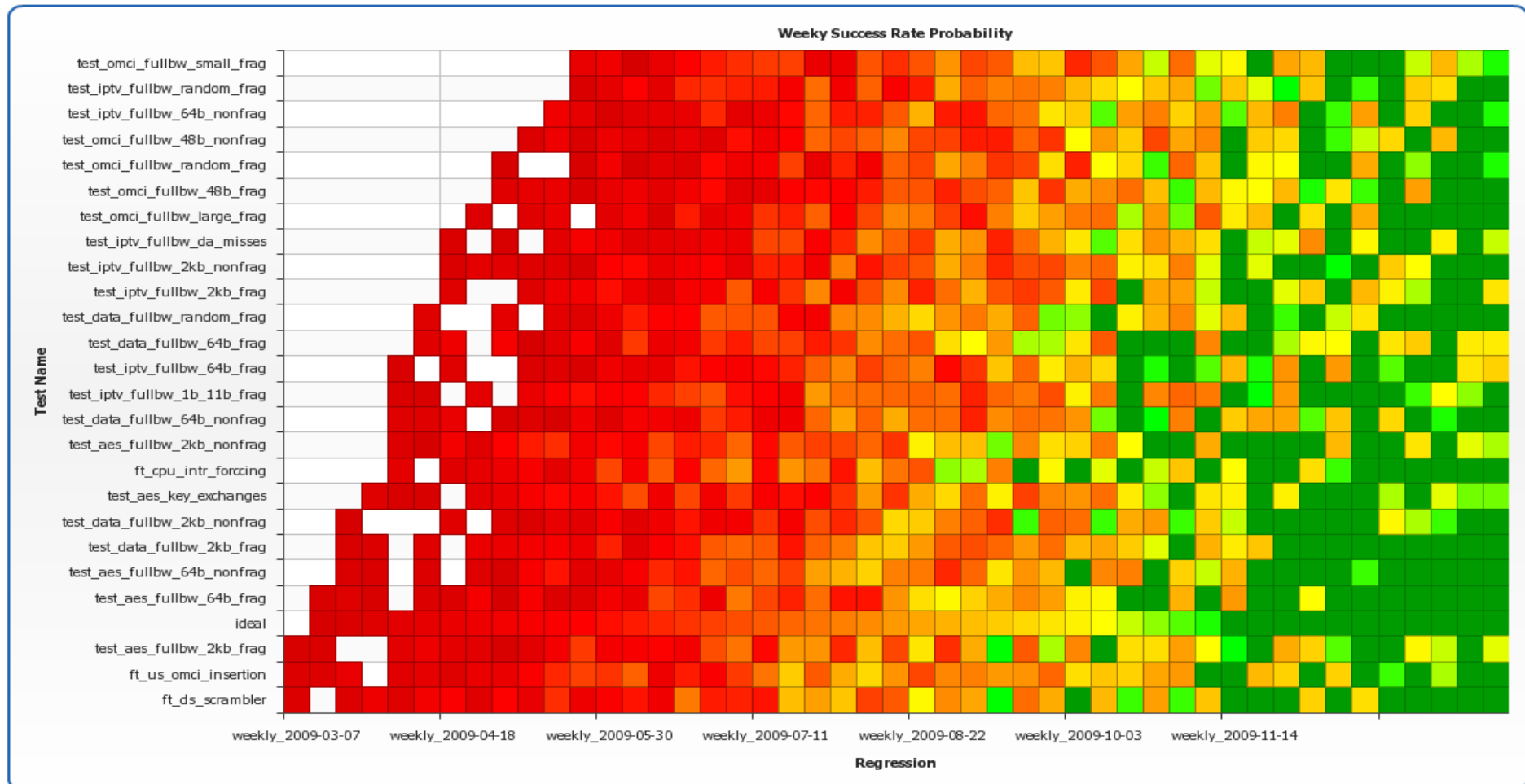Software tools and services to maximize team communication and efficiency.

Automate web-access to large-scale and historical program outputs with the DV Notebook™

Customer Problem Statement

- Constrained Random Testing of 2 FPGAs
  - 20-40 unique test names
  - 5-20 executions of each test, nightly or weekend
  - **100-800 log files** in a regression

- Visualize testing **Ramp-Up** and **Pass-Fail** status
  - Tests are written and brought up over time
  - Tests mainly fail at first

- **Drill-down** to detailed results, logs, waves

- Visualize **months of project improvement**
  - Automated: No spreadsheets, cutting, pasting

Idealized Customer Heat Map: Regression Status

Weeky Success Rate Probability

Customer Result

- Teams preferred Web-based/DB method:
  - vs. XL: Automated, real-time, multi-author
  - vs. Weekly status reports: Cumulative over time
  - vs. Email, tables, other text: Readability, clickability
- Requested follow on visualizations for:
  - Test state tracking
  - Per-module, per-engineer map of debug action items
- Project managers include charts in VP status
- Higher confidence:
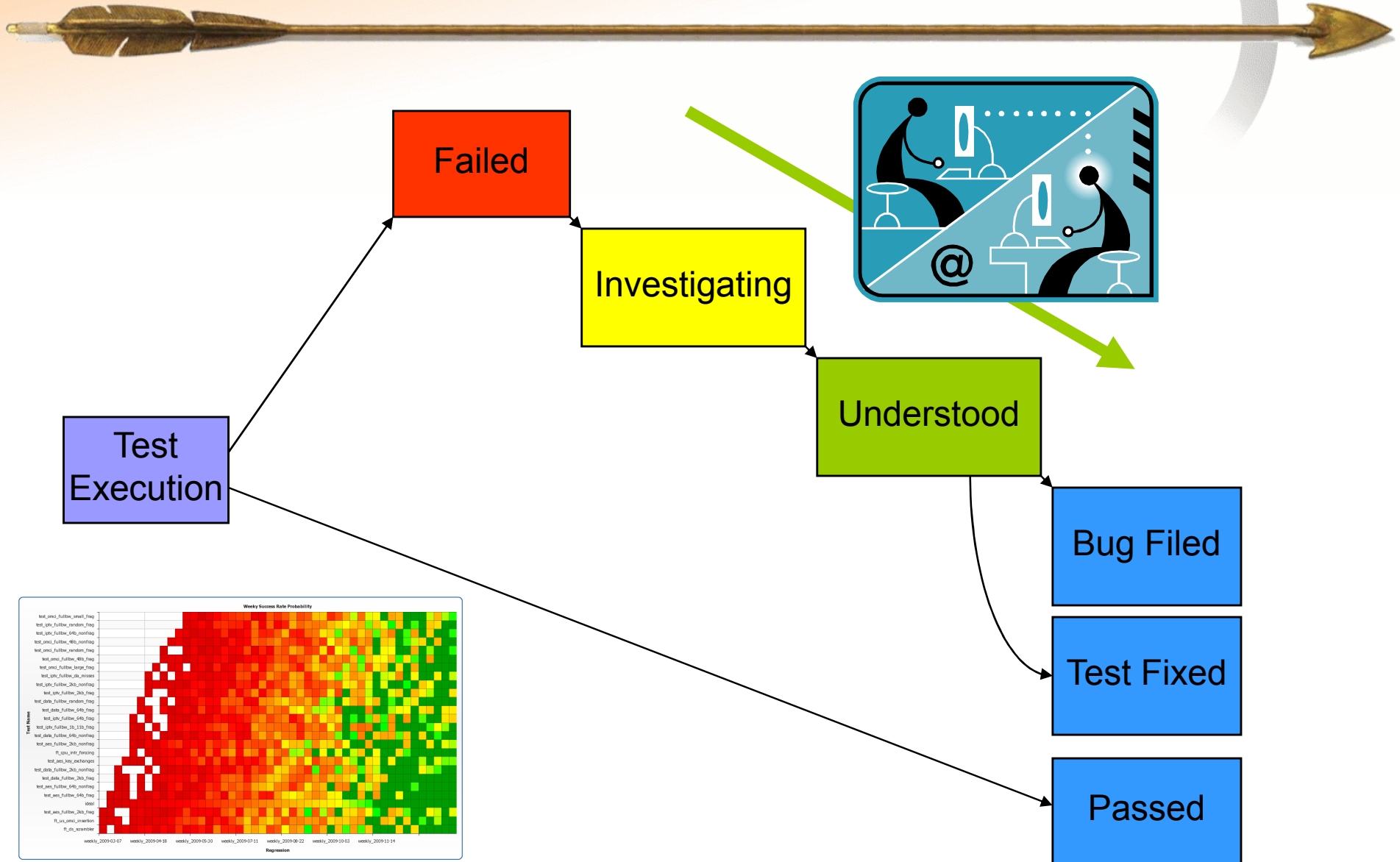 "We don't let ANY failure fall through the cracks."

Backup (Advanced)

- Illustration of Test State Tracking
- Additional Status Charts
  - Timing Failures: Slack Density Curves
  - Lint Warnings: Weekly Demographics
  - Code Volatility: Per-feature Changes
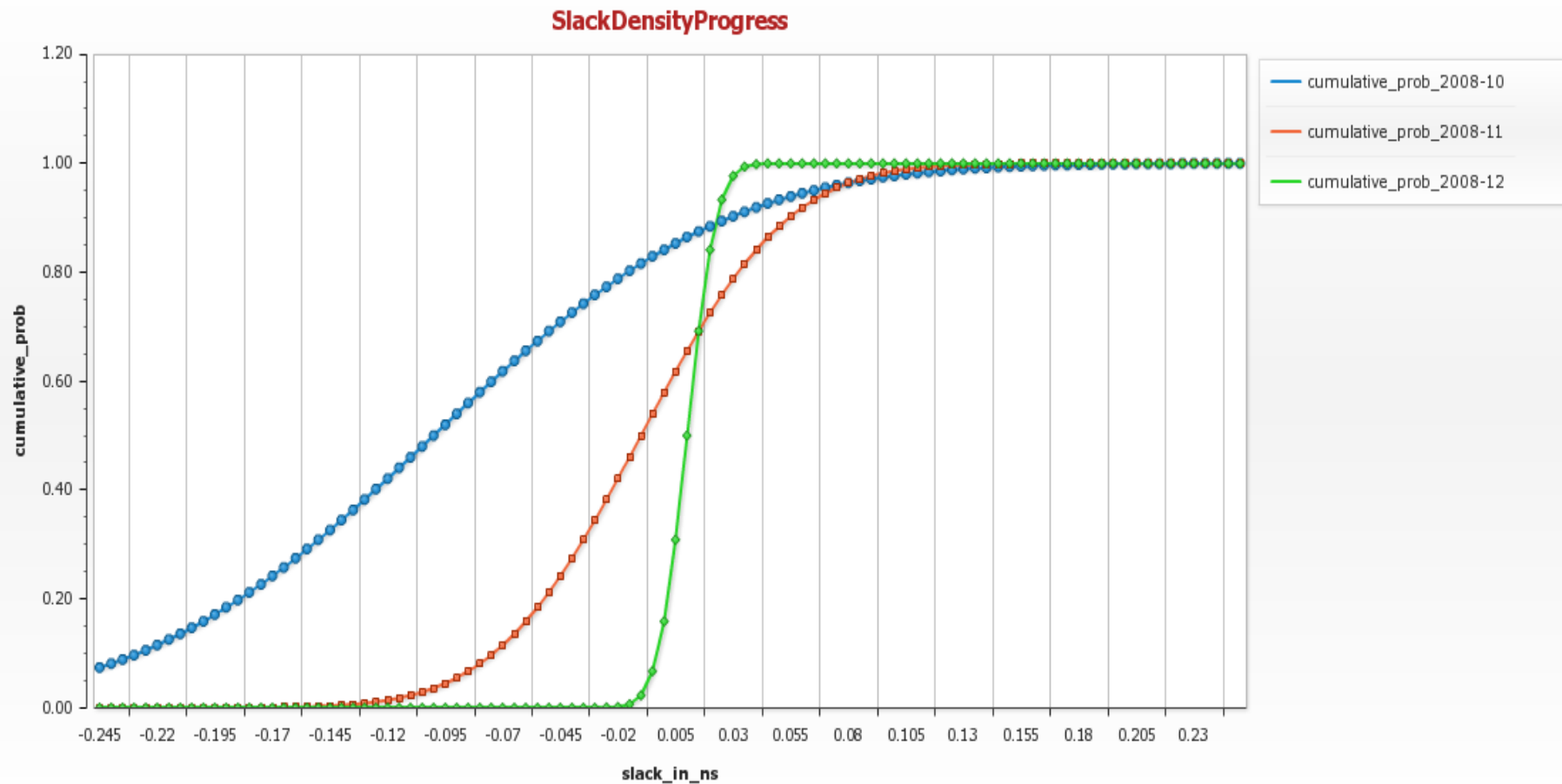 - Verification: Multi-Metric Curves
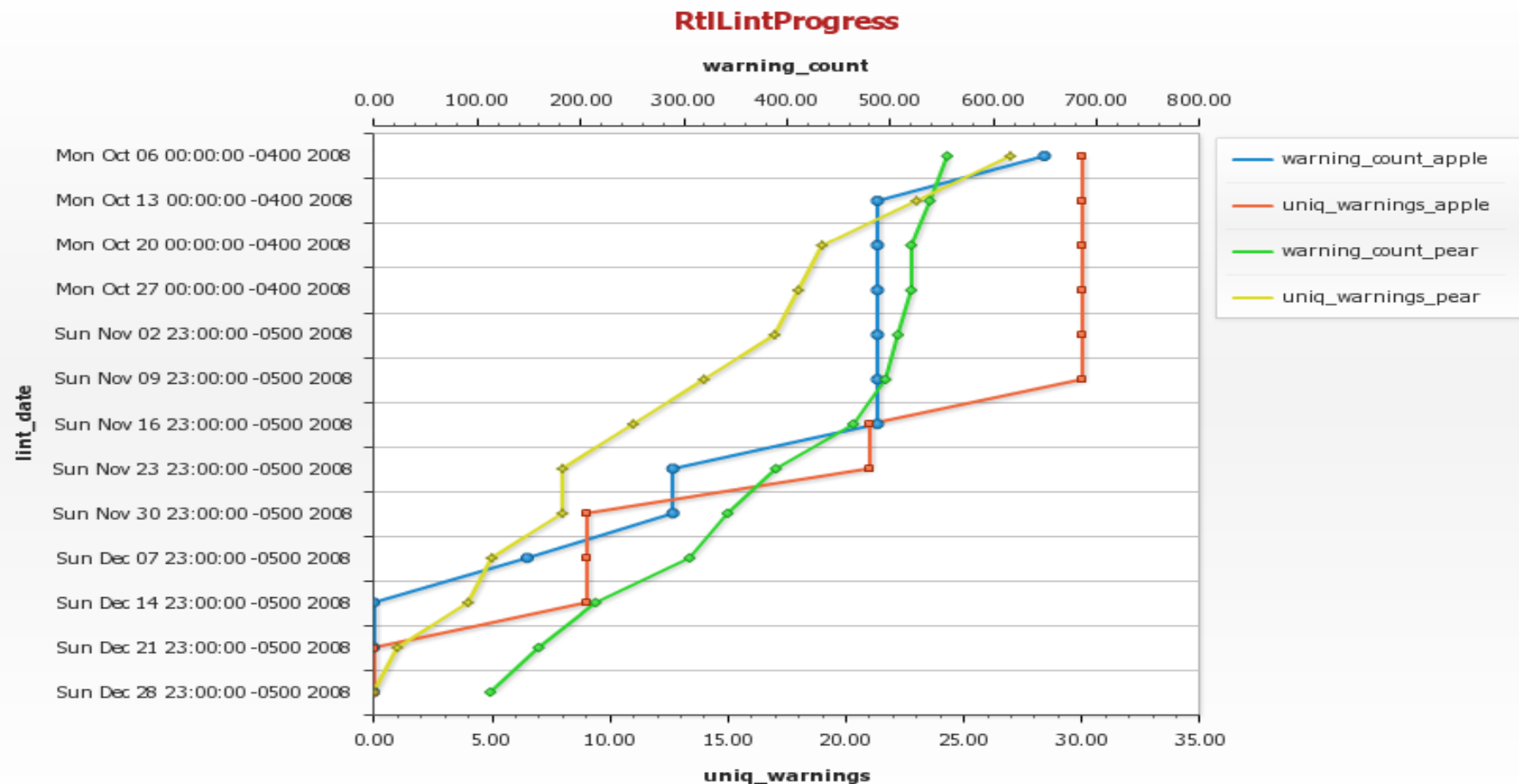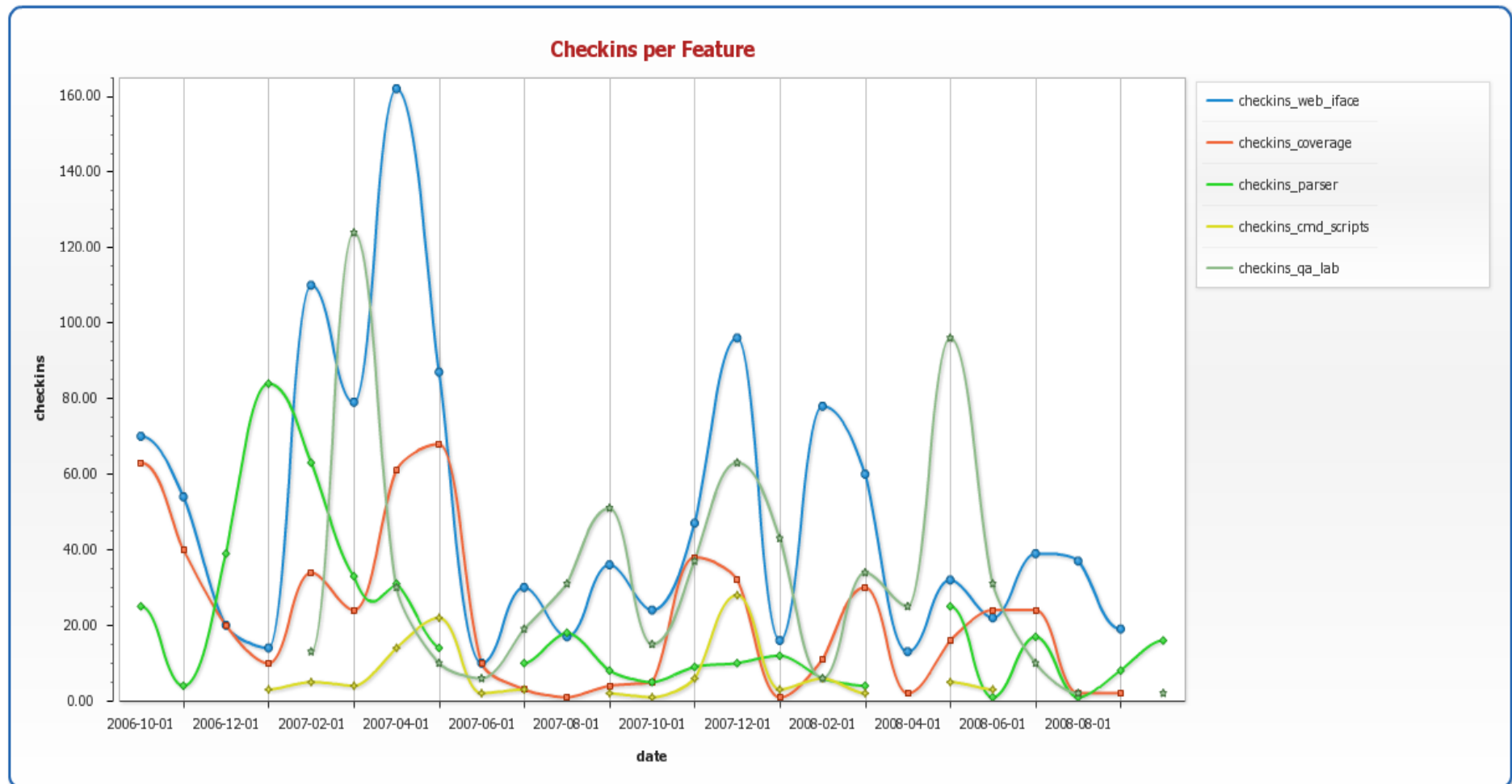
Test State Tracking

Failed

Investigating

Understood

Test Execution

Bug Filed

Test Fixed

Passed

Timing Failures:
Slack Density Curves

Lint Warnings:
Weekly Lint Demographics

Code Volatility:
Per-feature Changes

Checkins per Feature

Verification: Multi-Metric Curves