Development System Testing Deployment

CONTINUOUS OBSERVABILITY

Percepio Tracealyzer | **Percepio Detect** | Percepio DevAlert

Percepio Detect™

Verify System Stability and Detect Hidden Risks

Percepio Detect™ is the new addition to Percepio's portfolio of continuous edge observability tools, building on more than a decade of insights and experience. With Detect, Percepio brings an end to siloed views in development, test and maintenance of deployed products. The configurable product is optimized for use during testing of RTOS-based embedded systems, providing software monitoring for advanced profiling and for detecting anomalies. Analysis and debug data are stored in the Detect Server database to enable seamless information sharing within the entire team.

Key highlights

- Get comprehensive debugging data, even on production hardware without debug ports
- Reduce debugging time by up to 90%
- Profile your system over unlimited time
- Detect hidden stability issues through smart anomaly detection
- Supports team collaboration and CI/CT integration
- Private on-prem server for full control over data
- Licensed per seat or per installation

Collaborate for Faster Progress and Superior Quality

Percepio Detect is a collaboration tool with a shared database and dashboard, running on a private server in your network. This makes it easy to share debugging data between team members, giving the whole team the same insight and facilitating collaboration on reported issues. Performance metrics can be tabulated per test case, making it a breeze to evaluate changes between builds.

Optional CI integration allows for automated collection of detected issues and performance metrics into your existing CI pipeline.

For projects that require high confidence levels and/or regulatory compliance, Percepio Detect and Tracealyzer can be used in tandem, providing two independent profiling tools—while Tracealyzer relies on event tracing and host-side analysis, Percepio Detect monitoring runs on the device and calculates its metrics in real-time, independently from the event tracing.

When combined with DevAlert cloud-based observability, you get a third layer of assurance in the stability and efficiency of your RTOS-based systems.

Facing the Risks

What are the risks of RTOS-based development?

Developing RTOS-based embedded software brings inherent multithreading risks that may cause elusive stability issues. These issues may remain undetected despite extensive testing, code reviews and static analysis, as they are not apparent in the source code. They only surface as intermittent errors, often in late stages of testing where they become notoriously difficult to reproduce and debug.

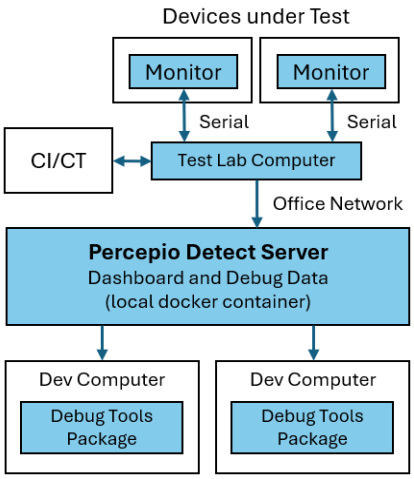
By monitoring key performance metrics in runtime, Percepio Detect identifies multithreading risks that may cause intermittent errors under slightly different circumstances. This could be, for example, potential deadlocks and near misses related to software timing or resource usage. Such issues can make your software brittle and sensitive to variations in thread timing, in the end triggering errors during real-world use.

Percepio Detect monitoring can be included in your regular integration testing to find multithreading risks early and with minimal effort.

Intermittent Errors

- Hard Fault Exceptions
- Expired Watchdogs
- Race Conditions
- Thread Starvation
- Timeouts
- Memory Leaks
- Stack Overflows
- Deadlocks
- Priority Inversions
- Data Sampling Jitter
- Buffer Overruns
- Failed Asserts

Verify, Detect, Resolve – Release with Confidence



Percepio Detect provides monitoring and a shared dashboard with debug data access for team collaboration.

How can intermittent issues be investigated easily?

Sporadic errors are challenging to debug due to limited initial information and difficulty in reproducing them. Percepio Detect provides deep observability on crashes, errors, and other detected issues and risks from the very first observation. Get visual RTOS traces on multithreading issues and see call-stacks, function arguments and variables on hard faults. Leverage ultra-fast application logging with 99% less performance overhead to get more details with minimal impact.

How to verify software timing and resource usage?

Percepio Detect enables systematic monitoring of software timing and resource usage over unlimited time, without needing to stream large amounts of trace data to a host computer. Thread metrics are calculated on the device in real time and aggregated as statistics. For high confidence results, monitoring can be active in field testing over many days or weeks. The metrics data will survive device crashes and restarts, and built-in data integrity checking protects against data corruption.

Continuous Observability™ Provided by Percepio

Percepio Detect forms an integral part of the Percepio systematic process and tools portfolio for Continuous Observability. Continuous observability enable product teams to collect and share diagnostic device data in an automated, systematic manner, customizable to suit the needs of each team and stakeholder.

Contact Us!

Contact Percepio to learn more and sign up for free early access evaluation

