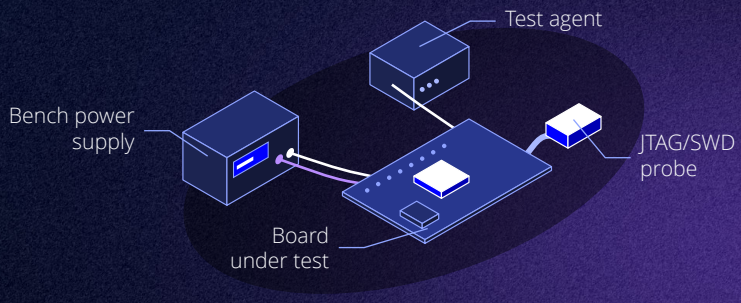
Interpretica

Midair for embedded systems



01 Code analysis

Visao

Visao checks firmware source and binaries without running them. It uses abstract interpretation and the Z3 and cvc5 solvers to track values across function calls and report defects.

Build tracing	Without a compile database, Visao runs the build and records each compiler call.
Defects	Out-of-bounds access, use after free, integer overflow, memory leaks, locks left held on error paths, and untrusted input passed to shell commands.
Without source	Machine code for ARM, AArch64, RISC-V, PowerPC, MIPS and x86, with the same rules.
Standards	MISRA C:2012, and a CycloneDX dependency list checked for known vulnerabilities.

19 languages **300+** rules **7** CPU architectures

02 Tests

TS Factory

TS Factory runs test suites on the boards on your bench and restores their configuration after each test.

Buses	GPIO, I^2C and SPI through the kernel interfaces, CAN, USB and the hardware watchdog.
Debug port	JTAG and SWD: the scan chain and its IDCODEs, halt, step and reset of a core, SVF files and boundary scan of the pins.
Flashing	DFU, fastboot, MTD, flashrom, esptool or OpenOCD. TS Factory reads the firmware back, compares it and waits for the board across the reset.
Power	Bench instruments over SCPI measure the energy of each test. Power switches restart a board that does not come back.
Kernel, memory	Kernel hardening, the kernel log and leaks of each test window, out-of-tree modules. Whether the image fits in RAM and how much is left, and a W^X audit.
Virtual boards	QEMU machines that roll back to a snapshot, for tests that can crash the system. Fuzzing that keeps crash inputs for regression runs.

60+ modules **100+** technologies **C** core language

03 Monitoring

Delta

Delta compares each unit with an approved baseline and reports what changed.

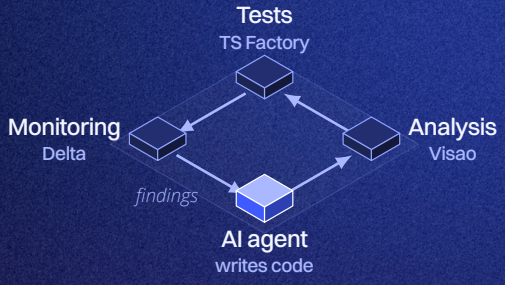
Collects	Processes, open ports and their owners, mounts, file checksums and permissions, packages, kernel modules and SSH keys.
Before release	On a mounted firmware image, Delta lists the files changed since the approved build.
Read only	Delta changes nothing on the device. Midair installs it over SSH.

4 CPU architectures: ARM, RISC-V, MIPS, x86-64 **0** runtime dependencies

Midair finds bugs and your AI agent fixes them

On real boards, the agent changes the firmware and TS Factory tests it on your bench.

Starting at €90 per month



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