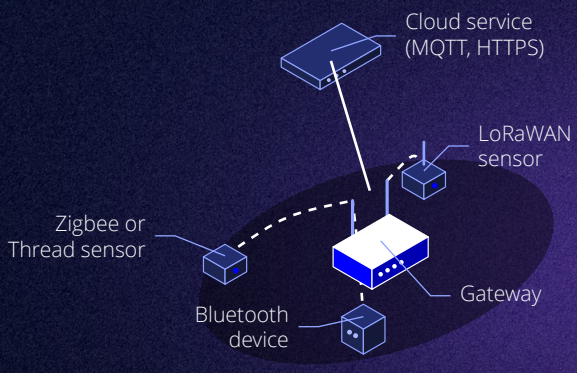
Interpretica

Midair
for IoT devices



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	Vendor binaries and SDK libraries: machine code for ARM, AArch64, RISC-V, PowerPC, MIPS and x86, with the same rules.
Dependencies	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 real devices on the bench and restores their configuration after each test.

Radio	IEEE 802.15.4 frames (Zigbee, Thread) and LoRaWAN frames: encryption, session keys and frame-counter reuse. Bluetooth audit. A software-defined radio records, decodes and replays what the device sends.
Broker and cloud	MQTT broker audit: anonymous access, known credentials, wildcard subscribe, no TLS. TLS and HTTP checks; tests check that the device rejects a bad server certificate.
Network	Delay, jitter, loss, duplication and reordering on a host interface. Links go down and up during a test.
Flashing	DFU, fastboot, MTD, flashrom, esptool or OpenOCD. TS Factory reads the firmware back, compares it and waits for the device across the reset.
Power	Bench instruments over SCPI and USB energy profilers measure the energy of each test. Power switches restart a device that does not come back.
Rare cases	Fuzzing that keeps crash inputs for regression runs. A fake clock for certificate expiry.

100+ technologies **50+** modules **C** core language

03 Monitoring
Delta

Delta collects a baseline from each device and compares the devices of the same model.

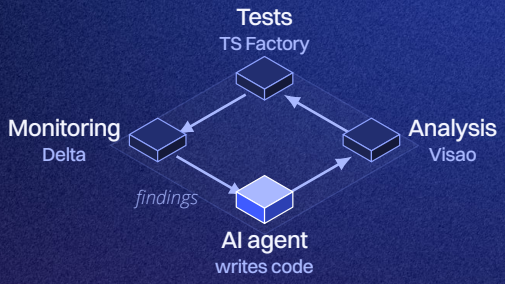
Collects	Processes, open ports and their owners, packages, file checksums and permissions, kernel modules and SSH keys.
Fleet	Delta reports what few devices of a model have, and what one device lacks.
Drift	On a timer, Delta reports new or removed processes, ports and packages, and changed files.
Read 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

Midair runs the same checks on each new firmware version.

Starting at €90 per month



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