Edge-Guard Field Brief

Offline edge AI for falling-object and structural-failure hazards in mining.

What it is

A fully functional, physical edge AI appliance designed to prevent falling-object hazards and structural failures in heavy industrial and mining environments. Industrial cameras feed a ruggedized compute module; a Rust-native inference pipeline runs every detection locally, in real time, entirely offline. The only outbound traffic is a kilobyte-sized encrypted alert to the site control room, from which a work order can be generated in the site's asset-management system.

Why mining, and why offline

Deep underground and in remote pits, the network fails first. Most camera-safety platforms assume a connected site; Edge-Guard assumes the opposite. The pressure is real: Australian mining recorded 10 worker fatalities in 2024, a rate 39 percent above the industry's five-year average (Safe Work Australia, Key WHS Statistics 2025). Falling objects and structural failure are exactly the hazard class where seconds of local detection matter and cloud round-trips do not survive.

Where it stands, said plainly

Validated at Technology Readiness Level 4: the appliance is real and the pipeline runs, proven in the lab, not yet on a mine site. We are looking for our first scoped field trial with one operator that has a falling-object or structural-integrity problem on overhead gantries, conveyors, or exposed rock walls. Scrutari's commercial focus today is healthcare AI governance; Edge-Guard is our measured second track, which is why we want one excellent trial rather than ten conversations.

What makes it different

Fully offline inference where competitors assume connectivity. A memory-safe Rust stack on ruggedized hardware rather than a Python pipeline in the cloud. And the roadmap that ties it to the rest of Scrutari: our evidence engine, running in production in our AI gateway today, is being brought to Edge-Guard so that every detection and alert carries a signed, tamper-evident record a safety investigation can verify independently. Detection you can act on now; evidence you can stand behind later.

The ask

One scoped field trial with an operator that has a falling-object or structural-integrity problem on overhead gantries, conveyors, or exposed rock walls. If that describes your site, write to partnerships@scrutari.ai with the hazard and a rough site profile. We respond within one business day. A recorded bench demonstration of the live system is available at scrutari.ai/solutions.