MICRO GENESIS

Accelerating Embedded Innovation with DevOps

Embedded systems have long been seen as the final frontier of DevOps, constrained by hardware dependencies, niche toolsets, and regulatory compliance. In this world, automation isn't just difficult, it's often thought impossible. At MicroGenesis, we challenge that belief.

Where Embedded Expertise Meets DevOps Excellence

We combine deep domain expertise in embedded systems with cutting-edge DevOps practices to bring speed and agility to hardware-bound legacy systems. From CI/CD pipelines to automated testing environments that integrate seamlessly with real hardware, we bring speed, precision, and predictability to embedded development.

> "We're experts in DevOps for the real world, where bugs don't just crash apps, they stall engines."

Services We Offer

From build automation to hardware-in-the-loop testing, we bring DevOps precision to embedded environments where software meets real-world hardware.

DevOps Consulting & Strategy

- DevOps Readiness Assessment
- Roadmap Design & Toolchain Optimization

CI/CD for Embedded Systems

- Automated Build & Integration Pipelines
- Hardware-in-the-Loop (HIL) Integration
- Physical test environment integration

Test Automation & Quality Assurance

- Static & Dynamic Code Analysis
- Code coverage, unit, integration, and system tests
- Test on target hardware, emulators or simulators.

Compliance & Security Integration

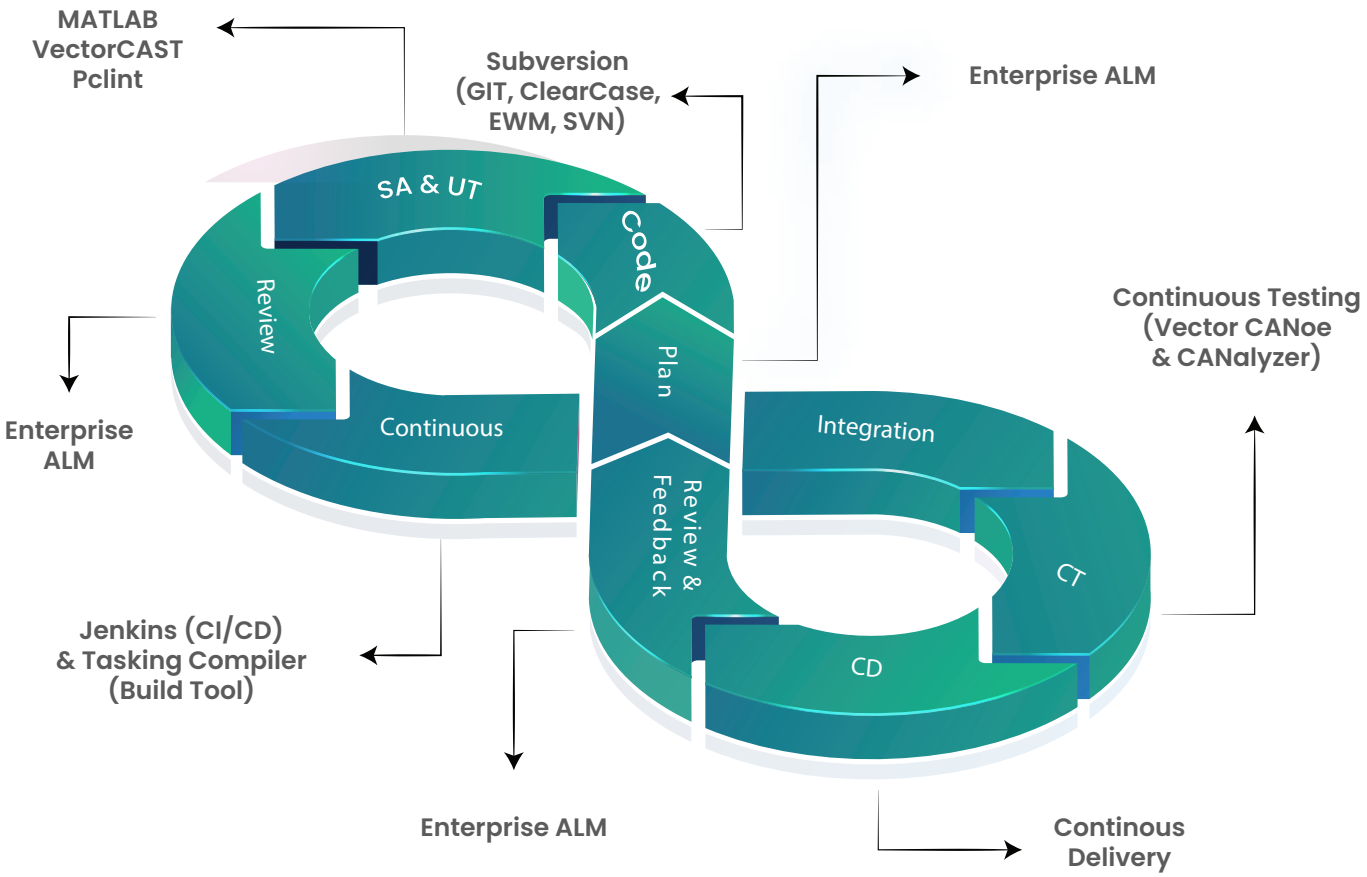
- Security scans in CI/CD
- SAST/DAST integration
- ALM integration for traceability and standards compliance

Monitoring and Logging

- Centralized monitoring and logging

Our Embedded DevOps Tech Stack

- Build Tools/Compilers: Tasking, Green Hills Software (GHS), and more
- Static & Dynamic Code Analysis: PC-Lint, VectorCAST, LDRA, Polyspace
- Model Testing & Simulation: Simulink, MATLAB
- CI/CD Tools: Jenkins, GitLab CI/CD
- Application Lifecycle Management (ALM): IBM ELM, PTC CodeBeamer, and Siemens Polarion
- HIL (Hardware-in-the-Loop) Testing Tools: CANoe, Wind River Studio, VectorCAST, and dSPACE
- Embedded Testing Tools: RTRT, OTE, LDRA
- Custom Integrations: Python scripts, Batch scripts and Linux shell scripts
- Real-Time OS & Platforms: VxWorks, Embedded Linux
- Cybersecurity: Polyspace, Helix QAC, SonarQube, Fortify, and Appscan
- Source Control Management (SCM): SVN, Git, Gitlab, Bucket, and more



A customized CI/CD pipeline integrating tools like MATLAB, Jenkins, VectorCAST, and CANoe

We automate repetitive tasks,

so your team can focus on what matters.

Benefits of DevOps in Embedded Systems

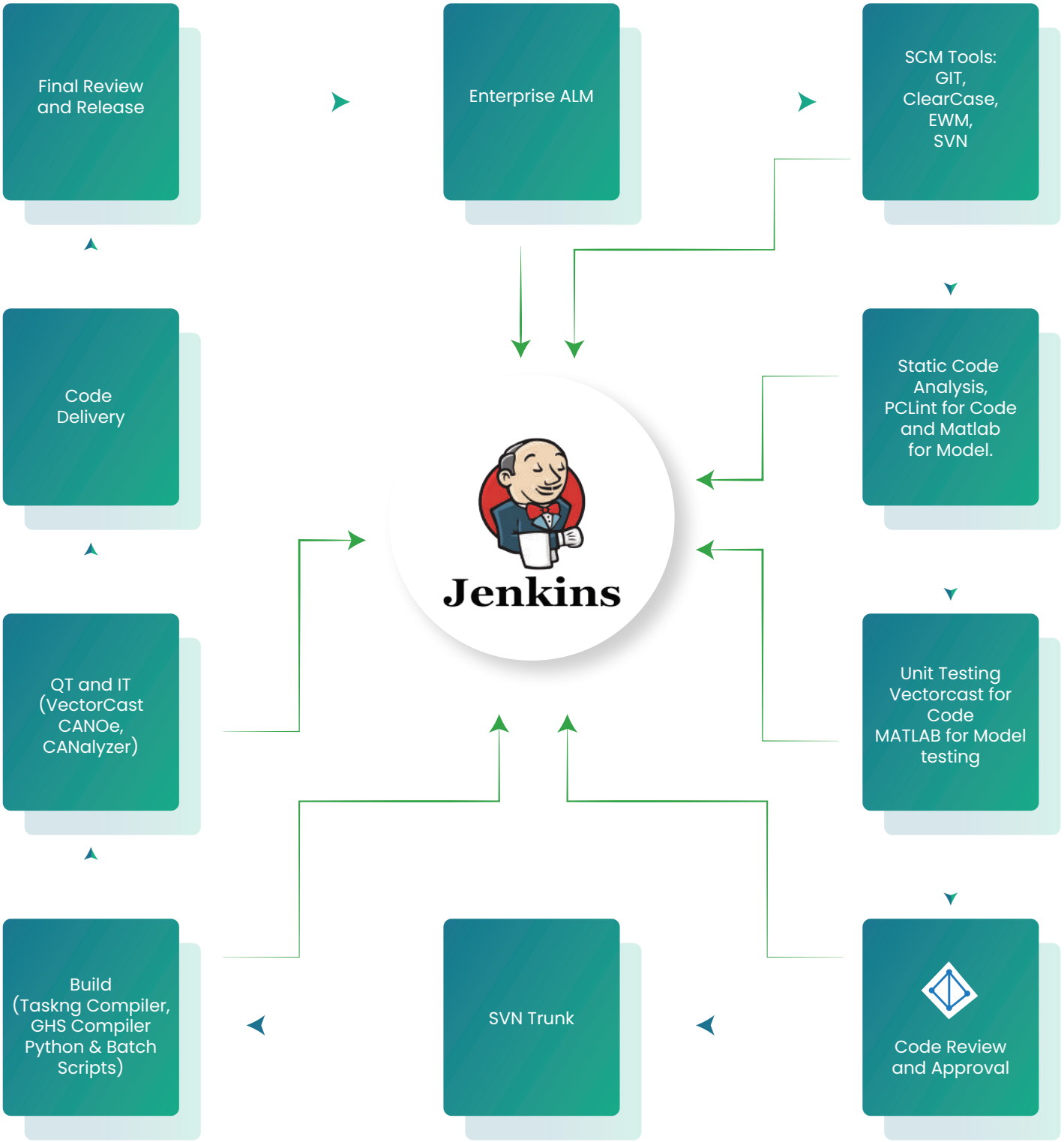
Faster Time-to-Market
Automated pipelines speed up build, test, and release cycles.

Better Quality
Continuous testing catches bugs early, boosting reliability and compliance.

Less Manual Work
Free up engineers by automating repetitive, low-value tasks.

Scalable & Standardized
Consistent workflows across tools, teams, and locations.

More Predictable Delivery
Real-time visibility into development means fewer surprises.



MicroGenesis' embedded DevOps architecture

Solution at work

A global Tier-1 manufacturer struggled with manual, siloed development processes involving niche tools, long testing cycles, and inconsistent build timelines. Their engineering teams were bogged down with repetitive tasks, and time-to-market was falling behind in a competitive industry.

MicroGenesis stepped in with a transformative DevOps solution tailored specifically for embedded environments. By integrating open-source tools like Jenkins with MATLAB, VectorCAST, and CANoe, and building custom scripts to automate legacy toolchains, we implemented a full CI/CT pipeline.

This reduced manual effort by 80% and introduced automated builds, giving engineers more time for innovation and drastically improving development velocity.

The result?

A scalable, standardized pipeline that slashed time-to-market by up to 40%, improved code quality through continuous testing, and laid the foundation for future-ready embedded DevOps.

MicroGenesis proved that with the right expertise, even the most hardware-bound environments can embrace automation and agility.

Ready to Reimagine Your Embedded Delivery?

Let's automate the future of embedded systems together.

MICRO GENESIS

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