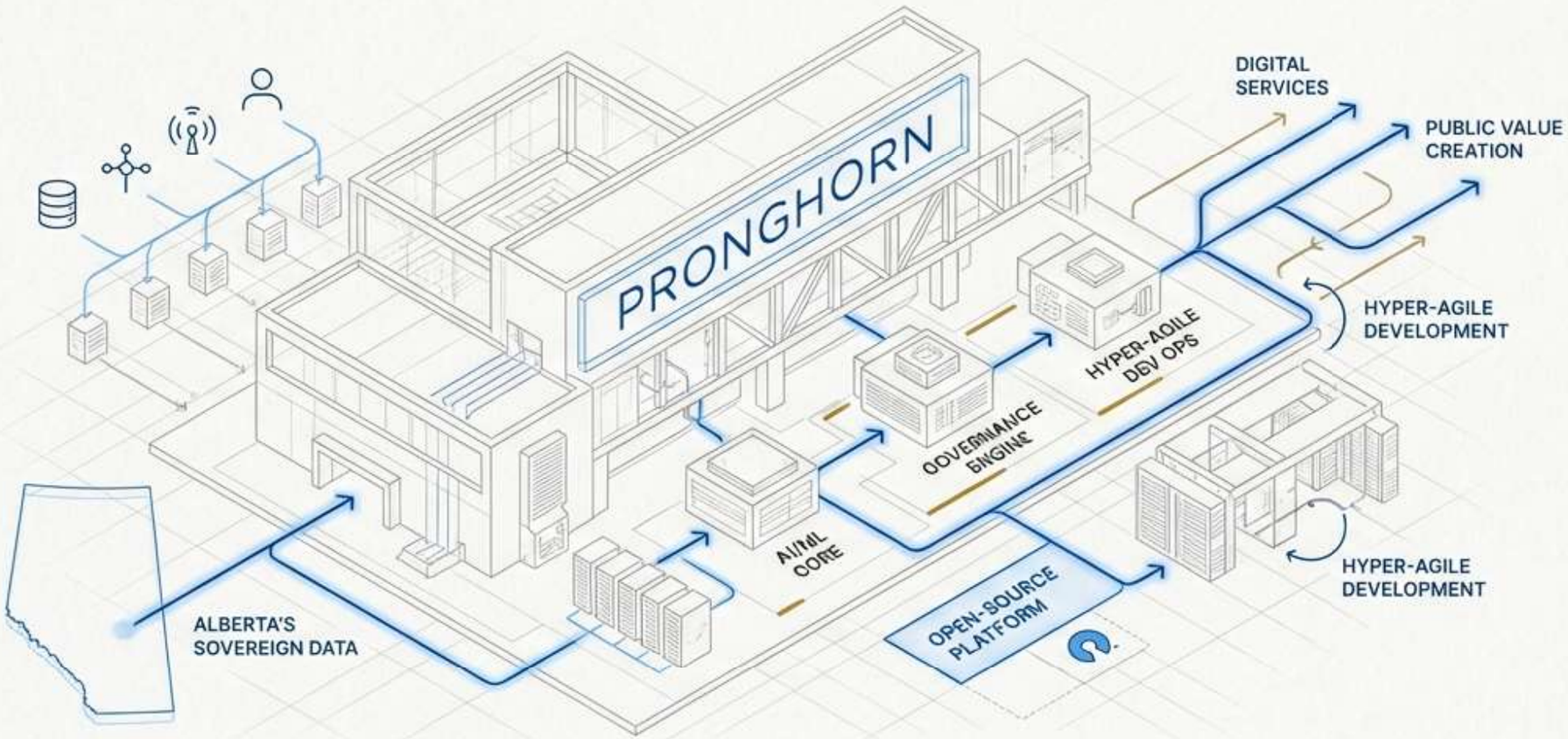
Pronghorn: Alberta's AI Factory for Digital Government

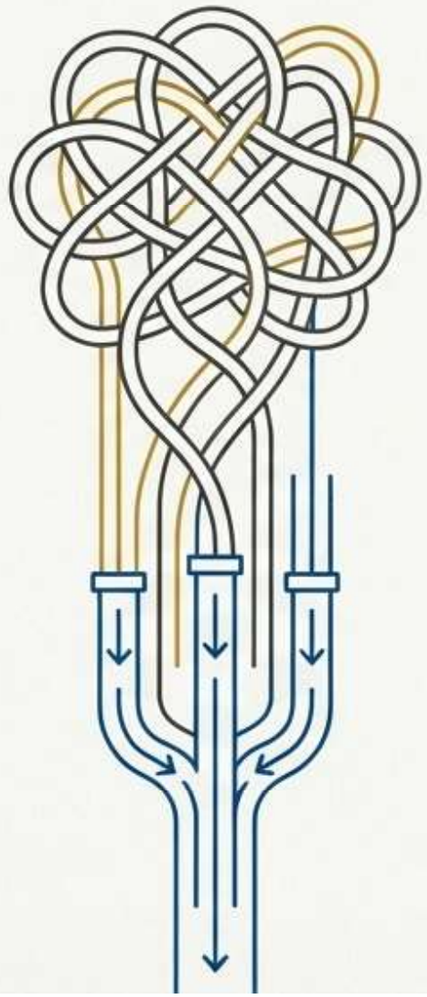
A Sovereign, Open-Source Platform for Hyper-Agile Development



We Are Moving from Months of Process to Minutes of Production

The Old Paradigm

- Weeks/months-long approval cycles
- Manual compliance checks against thousands of pages of standards
- Lengthy code freezes and review periods
- Information silos and vendor lock-in
- Two-week Agile sprints

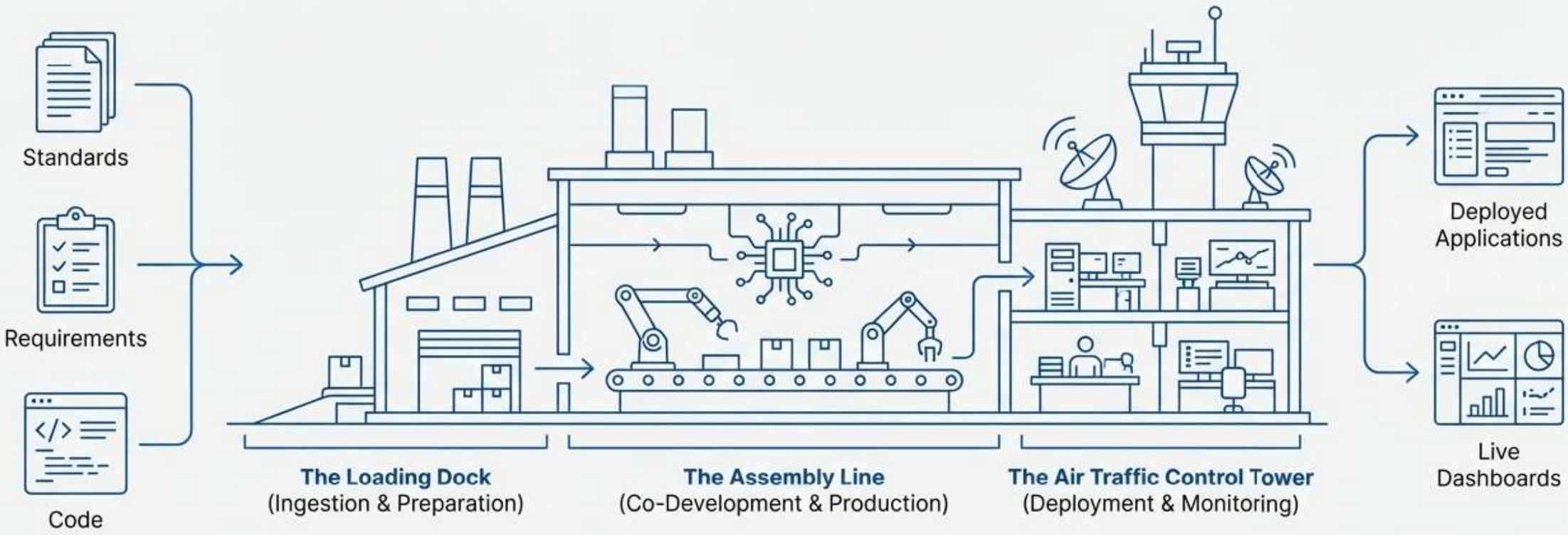


The AI Factory

- Real-time deployment with AI-driven checks
- Automated, continuous compliance enforcement
- CI/CD with pushes “down to the minute”
- Radical transparency and sovereign capability
- Two-hour “Hyper-Agile” co-development sessions

The AI Factory: A Blueprint for Digital Manufacturing

The AI Factory automates the entire application development lifecycle. Small, specialized human teams work in partnership with large suites of agentic AI counterparts to conceive, build, and deploy government services at scale.



Part 1: The Loading Dock — Where All Raw Materials Are Prepared

Function: This stage ingests, digitizes, and prepares every asset required for development. Nothing is left to interpretation; all blueprints are ready before an order is placed.

Inputs Catalogued

Standards

Hundreds of documents (cybersecurity, accessibility, branding) converted into AI-readable Markdown and JSON.

Requirements

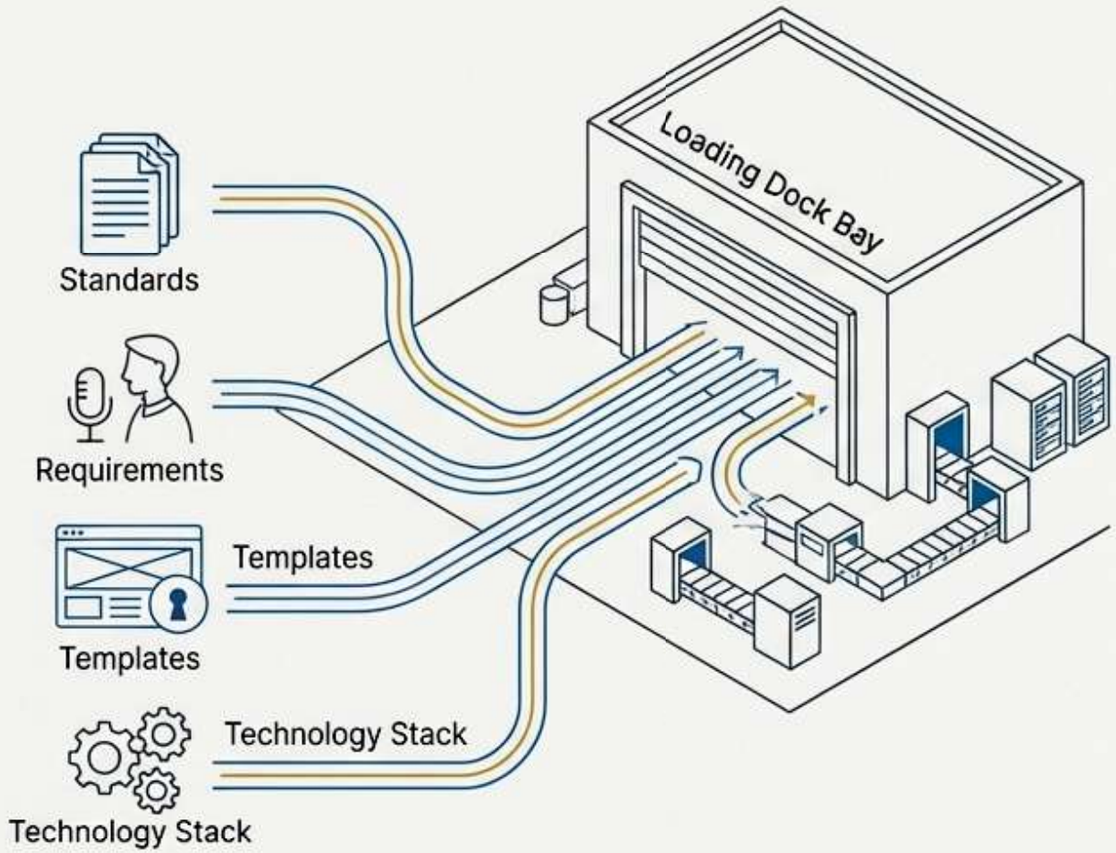
Mandate letters, business transcripts, and user needs documents are structured.

Templates

Enterprise-level 'Hello World' apps with integrated single sign-on, logging, and other core services.

Technology Stack

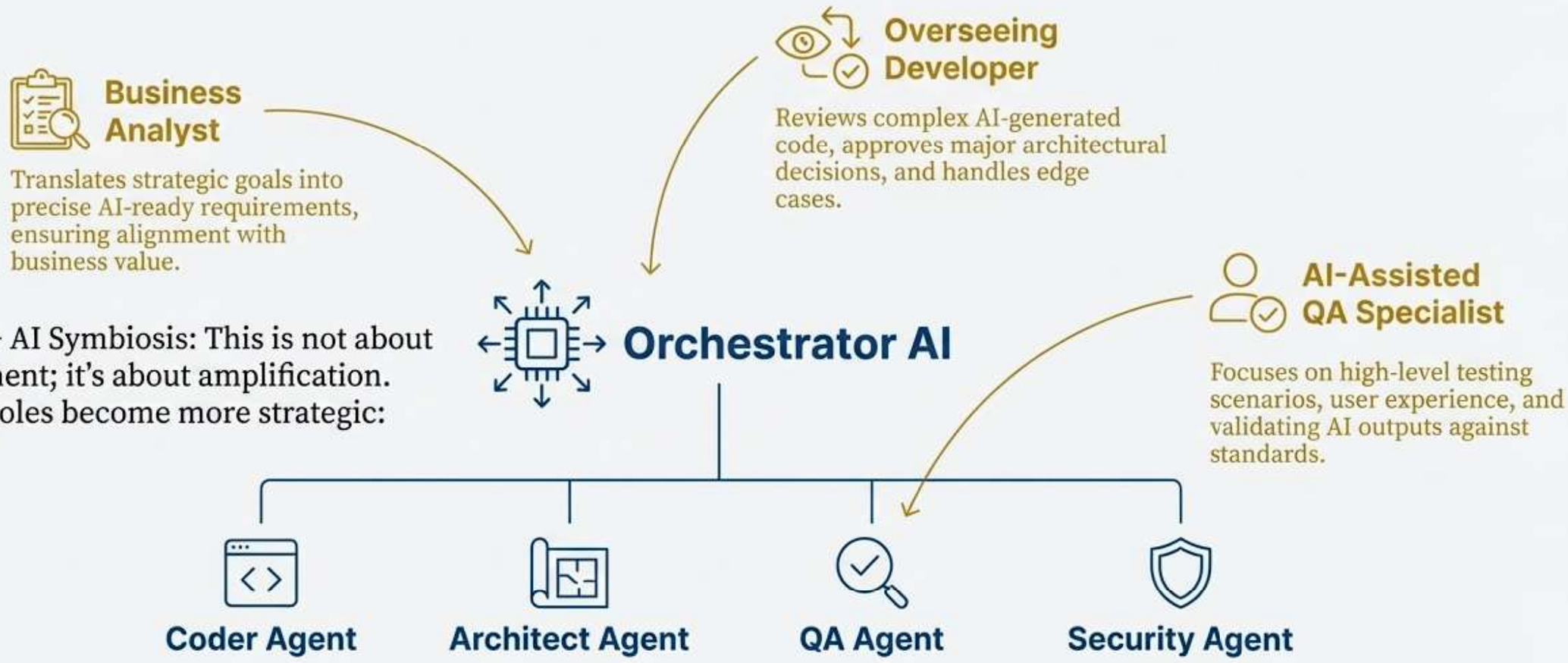
Approved languages, frameworks, libraries, and architectural patterns.



Outcome: A common, standardized set of tools and blueprints that ensures rapid, compliant execution.

Part 2: The Assembly Line — Human Expertise Orchestrates AI Execution

An orchestrator AI acts as the "factory foreman," managing a team of specialized AI agents that handle the vast majority of technical work: coding, architectural design, QA, and security screening.



Human + AI Symbiosis: This is not about replacement; it's about amplification. Human roles become more strategic:

From Two-Week Sprints to Two-Hour Co-Development Sessions

Concept: Hyper-Agility

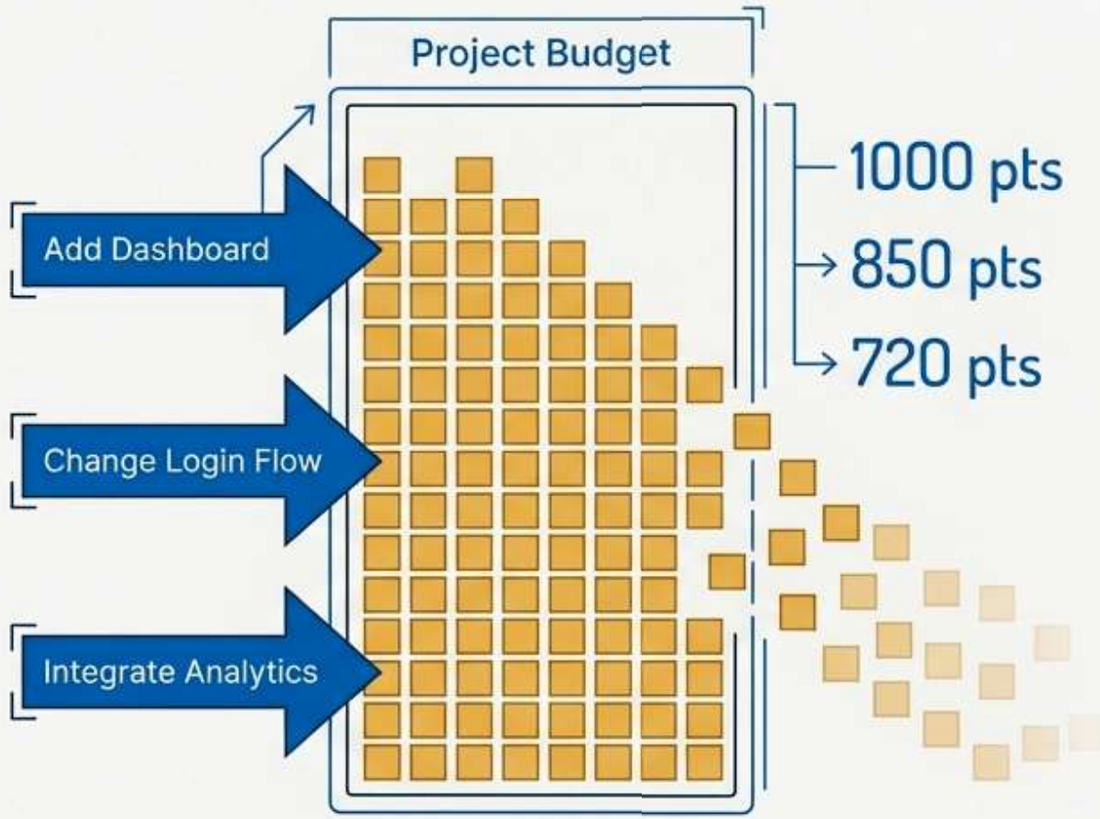
We replace traditional sprints with live, one-to-two-hour co-development sessions. Developers, stakeholders, and clients sit together as the system is modified in real-time.

Benefit

This allows for immediate feedback and refinement. Clients can see the application come to life, join the factory process, and provide direct input to the AI or the human team.

Managing Scope Creep

Scope is managed through a points-based system. A project is allocated a 'budget' of points (e.g., 1000 points). New features or changes 'burn down' the point budget. This provides a transparent, real-time mechanism to track effort and prevent uncontrolled expansion, turning 'scope creep' into managed, visualized refinement.



Part 3: Air Traffic Control — From Gatekeeping to Guided Deployment

The weeks-long Change Advisory Board (CAB) approval process is replaced. The CAB now reviews the project's intent in principle at the start, then AI performs a high-speed, automated pre-flight check for deployment.

AI-Driven Pre-Flight Checks

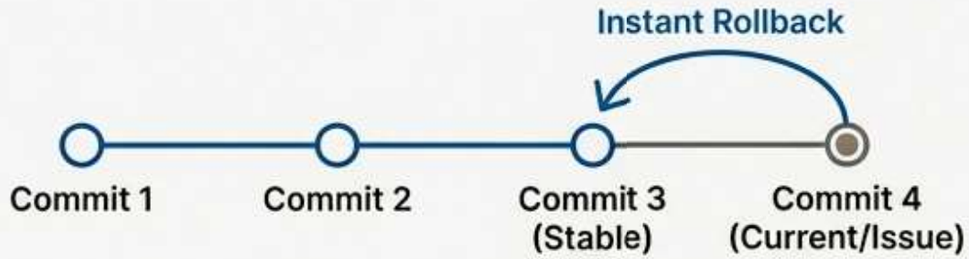
- ☑ Generates a change impact plan.
- ☑ Analyzes impacts on database schemas and APIs.
- ☑ Validates cloud environment configuration.
- ☑ Tests for cybersecurity vulnerabilities.
- ☑ Drafts/updates the Interim Authority to Operate (IATO).
- ☑ Updates all system documentation automatically.

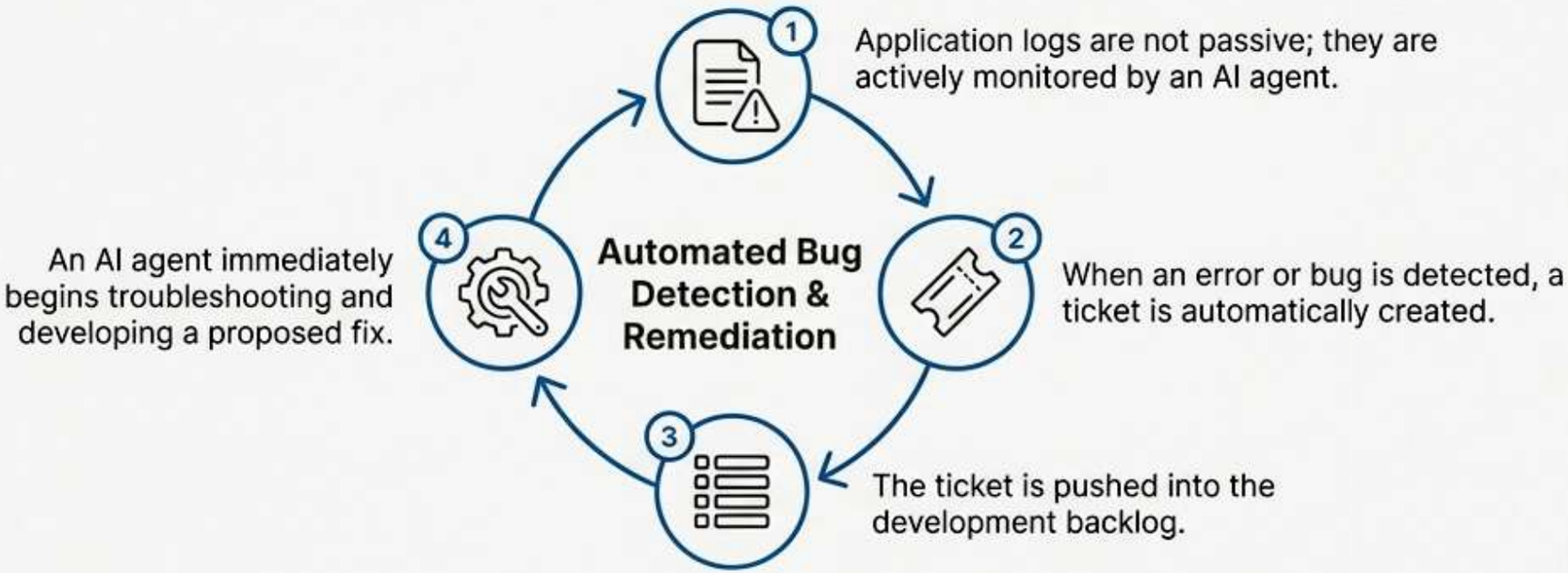
Result: A continuous deployment pipeline where pushes can happen 'down to the minute,' guided by automated checks and high-level human oversight.

A Resilient System Designed to Self-Heal in Minutes

Instant Rollback

The entire system is built on Git. Any change can be instantly rolled back to any previous point in time, providing a complete safety net.





We can measure the time from bug identification to a proposed fix being ready for review in **minutes**, not days or weeks.

Pronghorn: The Open-Source Engine Powering the AI Factory

Pronghorn is the enterprise software platform that brings all three parts of the factory to life.

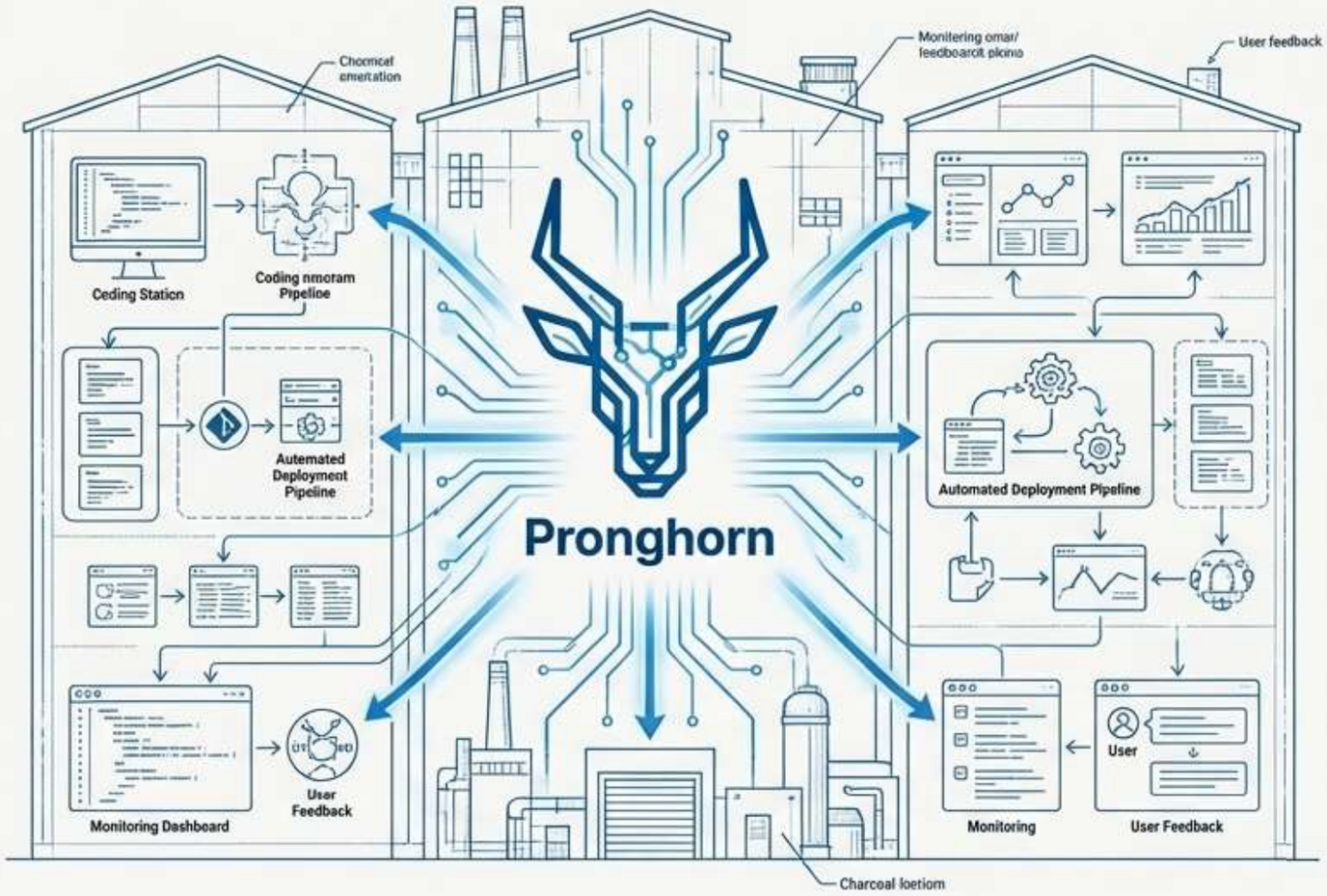
Core Identity

Developed by the Government of Alberta.

Free and Open-Source Software (FOSS).

Licensed under the MIT License for broad adoption.

Release: Enterprise rollout planned for January 2026.



Functionality

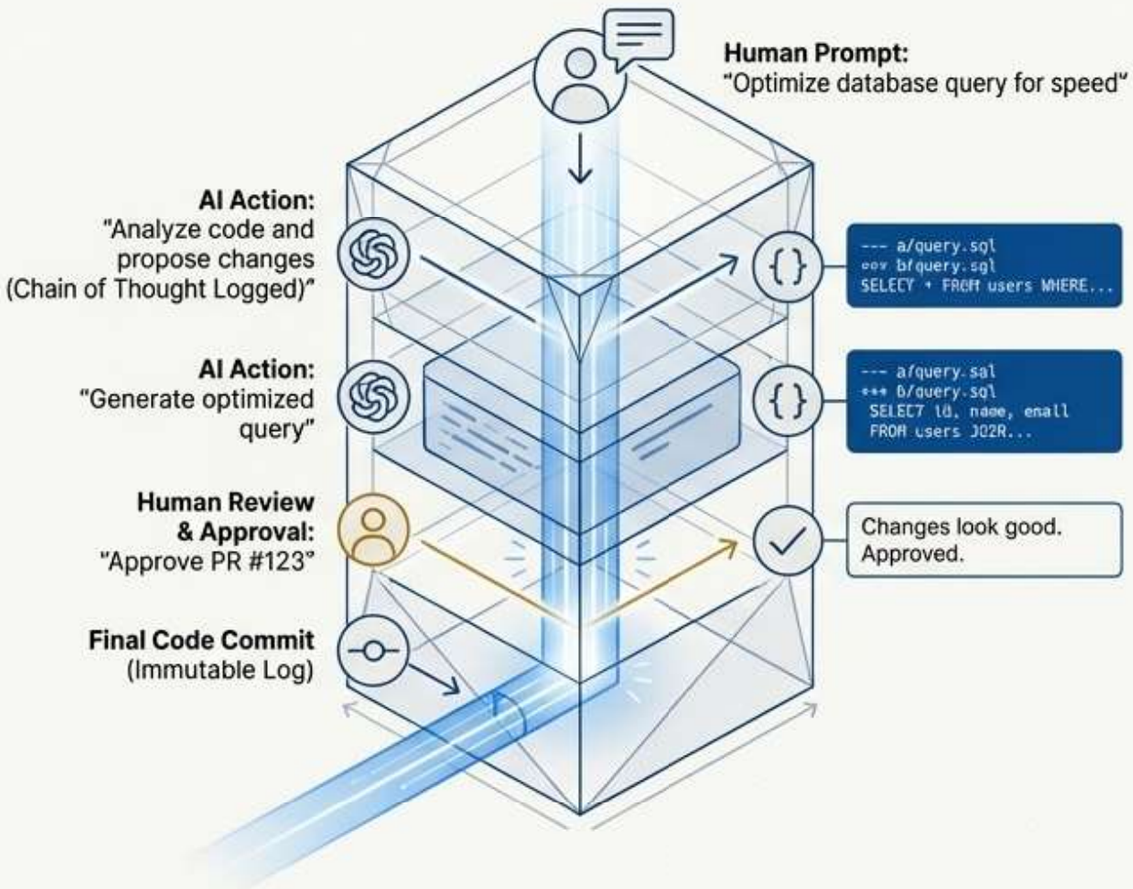
Pronghorn manages the entire lifecycle: ideation, requirements gathering, architecture, repo management, collaborative coding, deployment, monitoring, and real-time user feedback loops.

Accountability is Built-In with Radical Transparency

Who is accountable when AI writes the code? The people are. We enable human accountability with an unprecedented level of transparency.

Deep Auditability

- Every action taken by an AI agent is recorded in an immutable audit log.
- The system uses a Git-based branching and pull request methodology. No change goes into production without explicit approval.
- The complete chain of thought for every AI decision is logged and reviewable.
- All human prompts are also logged, providing full traceability.



This level of transparency exceeds any human-only process. The audit log is not a risk; it is our most powerful tool for accountability.

Agentic Collaboration Prevents Hallucination and Enforces Standards

How do you ensure AI agents don't invent requirements or ignore complex standards?

The Advantage

Blockers are flagged instantaneously via text or system alert, not discovered days later in a stand-up meeting. It's a faster and more transparent escalation path than in human teams.

Designed for Developer Freedom and Technological Sovereignty

Flexible Workflows

Developers can work in their preferred local IDE (e.g., VS Code). Changes are pushed to a Git branch and are immediately picked up and analyzed by Pronghorn. The system can be tested in the cloud or run locally in a containerized sandbox.

Interoperability

Pronghorn works *with* existing tools like GitHub Copilot, not just as a replacement. It can pick up a project from another platform via GitHub and enable a back-and-forth workflow.

No Vendor Lock-In

- **Model Agnostic:** Run on any large language model—commercial, open-source, or sovereign hosted models. Avoid model drift and dependency on a single provider.
- **Infrastructure Agnostic:** Runs in any cloud environment, backed by open-source Supabase.

An Invitation to Build the Future of Public Sector Technology

Pronghorn is a high-tech community and open-source platform to so considen selvor serasomain platforms the Pronghorn in the fare public sector technology.

Our Commitment

The Government of Alberta is funding the core development and support for Pronghorn.

Our Invitation

We are building a community of practice. As an open-source platform, Pronghorn is fully transparent—unlike black-box commercial tools.

Audit our code.

Propose pull requests.

Benchmark our performance.

Help us innovate and build a shared public utility.

We welcome community contributions, but all pull requests are reviewed before being merged into our isolated, internal instances. **We combine the benefits of open-source transparency with enterprise-grade security.**