EXHIBIT VII: OpenOperations-AI (Sovereign Resource Orchestrator)

Project Scope: Local-First Business Intelligence & Predictive Operations Engine

Architect: David Culp, Principal Solutions Architect

Key Value: Transformed raw infrastructure into a cost-saving operational tool by automating document ingestion and vendor risk scoring locally.

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1. EXECUTIVE SUMMARY

Building on the "Sovereign Architect" philosophy, I engineered a private-cloud-native operations tool to eliminate "Information Overload" and "Cloud-Dependency Tax." By integrating local OCR and LLMs, this system analyzes multi-site vendor data without exposing sensitive financial metadata to third-party SaaS providers.

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2. THE CHALLENGE

- **Operational Visibility:** Monitoring costs and compliance across 32 clinical sites often results in "Compliance by Spreadsheet," which is difficult to audit.
- **Privacy Risks:** Standard BI tools require uploading sensitive vendor contracts and financial logs to the cloud, creating a potential breach point for organization-wide strategy.
- **Manual Friction:** Hand-keying invoice data leads to "human-element" errors and configuration drift in operational reporting.

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3. THE ARCHITECTURAL SOLUTION

I implemented a 3-stage automated pipeline that runs entirely on-premise within the **Autonomous Datacenter** model.

- **Layer 1 (Ingestion):** A Python-based "Sovereign Watcher" monitors a ZFS-replicated directory for incoming documents.

- **Layer 5 (Intelligence):** Utilizing **Tesseract OCR** and **Ollama (Mistral-Nemo)**, the system performs a deterministic analysis of PDFs to extract vendor names, totals, and risk categories.
- **Layer 6 (Governance):** Automatically assigns a **Risk Score** (1-10) based on NIST 800-53 security standards, flagging vendors who lack current BAA or SOC2 certifications.

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4. TECHNICAL STACK

- **Compute:** Dell Precision 7780 Workstation / Proxmox HA Cluster.
- **AI Engine:** Ollama running Mistral-Nemo (Local-Only).
- **Backend:** Python (FastAPI), SQLModel, and Watchdog.
- **UI:** Tailwind CSS Sovereign Dashboard.

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5. BUSINESS OUTCOMES

- **Zero-Cloud Footprint:** 100% data sovereignty achieved by processing all financial and operational metadata locally.
- **Extreme ROI:** Leveraged existing high-performance hardware to replace expensive third-party BI subscriptions.
- **Audit Readiness:** Created a deterministic paper trail for every operational expense, fully integrated with the organization's existing GRC engine.

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6. TECHNICAL DOCUMENTATION INDEX

- **GitHub Repository:** https://github.com/davidculp-tech/OpenOperations-AI
- **Demo/SOP:** Included in the *Autonomous Datacenter Deployment Guide*.