

## **MaxOps – Structural AI Companion Layer (Audit-CoPilot)**

Version: 1.0

Issued by: SAC, Take Back Your Data (TBYD)

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### **1. Purpose**

This document defines the MaxAudit Structural AI Companion (Audit-CoPilot), a deterministic, logic-based advisory system for DevSecOps teams. The CoPilot interprets MaxAudit structures in real time, answers structural questions, generates compliant disclosures, and visualizes audit paths – all offline and auditably.

### **2. Principles**

- No language models, no cloud, no trust assumptions
- Built from MaxAudit structure, not inferred behavior
- Output is fully explainable and hash-verifiable
- Runs locally (browser or CLI) in offline mode

### **3. System Inputs**

- Fork Registry snapshot
- AuditChain logs (Verifier / Dongle)
- Structural profiles + Fork definitions
- Disclosure log (optional)
- MaxControl state map (if available)

### **4. Core Capabilities**

- 🧠 Structural reasoning (e.g. "Does this Fork match its profile hash?")
- 🗺️ Visual audit map (e.g. "Trace this yellow result from Twin L4 to Dongle scan")
- 📄 Disclosure generation (e.g. "Draft a level-2 incident for audit #843")
- 🔍 Consistency check (e.g. "Fork A references invalid parent registry block")
- 🗨️ Guided queries (e.g. "List modules affected by revoked license X")

### **5. Output Channels**

- JSON (query result + chain trace)
- SVG export (audit flow map)
- PDF disclosure draft
- CLI console output
- Offline token (QR-signed result snapshot)

## 6. Engine Architecture

- Logic Core: Fork-aware rules engine with deterministic parser
- Validator: compares inputs against registry schema
- Visualizer: renders interactive audit traces (pure JS)
- Interface: CLI + optional browser frontend (no network access)

## 7. Deployment Context

- Airgap-ready (ISO boot or container)
- DevSecOps laptops
- Audit authority field devices
- System integrator diagnostic stacks

## 8. Security Posture

- Immutable binary with reproducible build
- No training data, no telemetry, no logs
- Output always traceable to deterministic source