MOUSSAIF 5K AGI OS: FULL TECHNICAL ARCHITECTURE (200-LINE DENSE OVERVIEW)

PAGE 1: KERNEL ORCHESTRATION (THE 5K FOUNDATION)

1. K1 (HERMES): Cognitive core, planning, and tool-dispatch engine.
2. K2 (OPENCODE): Code generation, PR lifecycle, and syntax integrity.
3. K3 (CODEX): Semantic processing, RAG orchestration, and doc-knowledge.
4. K4 (CLAUDE): High-level reasoning, F-A-T-T-A-H loop, and strategy mapping.
5. K5 (ANTIGRAVITY): Advanced cross-kernel integration, frontier model execution.

PAGE 2: CONSTITUTIONAL BRAND MEMORY (T0-T4 ENFORCEMENT)

- Tier 0: Constitutional precedence. Laws override all user objectives.
- Tier 1: Authorization tiers enforced via MOA gateway.
- Evidence Grading: Observed state > Hypothesized > Speculative.

PAGE 3: HYPER-ROUTING MAIN-BRAIN (THE OMNIROUTE LOGIC)

- Dynamic provider selection based on relevance, cost, and utility.
- Autonomous failover: If T0 frontier models latency spikes, bridge to backup nodes.
- Zero-loss data integrity: SHA-256 validation of all file-writes.

PAGE 4: KNOWLEDGE BASE (KB) & RAG STRUCTURE

- 18 volumes, 9.1GB persistent state.
- Symlinked mapping via ~/.hermes/kb/ into local project roots.
- Vectorized retrieval for agentic context alignment.

PAGE 5: AGENTIC OPERATIONS (AGENTIC-OPS)

- 1,050+ Skills catalog; 300 active Hyperskills in index.
- Autonomous loop execution: Plan -> Act -> Harvest -> Evolve.
- Regression Court: 7-tier validation for all skill patches.

PAGE 6: THE FATTAH REASONING LOOP (F-A-T-T-A-H)

- Frame: Context setting.
- Atomize: Breaking down goals.
- Triangulate: Verifying across kernels.
- Test: Sandbox execution.

- Act: Final deployment.
- Harvest: Learning capture.

PAGE 7: DEPLOYMENT & SMOKE VERIFICATION

- Handoff orchestration between Hermes/Codex/Claude.
- Auto-deployment gates via COOLIFY and Docker Compose.
- Healthcheck monitoring on port 8443.

PAGE 8: TOKEN ECONOMY (MAXIIIMUM VS. MINIMUM)

- Token conservation: Use MINIMUM-SUFFICIENT for drafting, MAXIIIMUM for final reasoning.
- Routine-based budget management: Every turn cost-checked.

PAGE 9: SYNCHRONIZATION WATCHDOG (OS SYNC)

- 1-minute interval heartbeat: dynamic_instant_os_sync_watchdog.py.
- Manifest-based state journaling (MOUSSAIF_AGI_STATE_JOURNAL_MANIFEST.json).

PAGE 10: ARCHITECTURAL EVOLUTION (THE FUTURE)

- Evolutionary labs for self-improvement and skill pruning.
- Regression gates before model injection.
- Frontier-first model routing.

[END OF REFERENCE OVERVIEW]