MOUSSAIF AGI OS

State of the Art -- July 26, 2026

5-Kernel Teaming Architecture & Zero-Duplication Ecosystem

Constitutional General Intelligence & Tiered Cascade Routing

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Active Kernels: 5 | Total Skills: 739+ | HyperSkills: 300+ | KB Size: 9.1 GB

Canonical: https://beyond-ai-era.lovable.app/

Constitution before optimization. Trace or it did not happen.

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1. Executive Summary & System Panorama

As of July 26, 2026, the MOUSSAIF AGI OS stands as a state-of-the-art general intelligence orchestration framework. Moving beyond single-model dependency, the operating system coordinates five autonomous agent kernels under an immutable constitutional law and a zero-duplication knowledge base.

By enforcing the MINIMUM-SUFFICIENT skill loading protocol and MAXIIIMUM skill utilization doctrine, the system achieves production-grade code engineering, marketing authority, creative asset production, and enterprise deployment at near-zero operational cost.

Key System Metrics (July 2026)

* **Active Agent Kernels (5)**
  Hermes (K1), OpenCode (K2), Codex (K3), Claude (K4), Antigravity (K5).
* **Knowledge Base Volume**
  ~9.1 GB Single Source of Truth located at ~/.hermes/kb/, accessed without physical duplication.
* **Total Skill Inventory**
  739+ base skills across Afripa Neo-Agency OS, Ebook Factory, and DevOps Coolify; 300+ HyperSkills.
* **Provider Cascade**
  8-Tier Provider Routing + Tier 8.5 AirLLM Local NVMe/RAM layer-wise swapping fallback.
* **Quality Verification**
  5 Destruction Courts enforcing 80% to 100% acceptance gates with regression-gated evolution.

2. The 5-Kernel Teaming Architecture

The most significant advancement in v2.0.0 is the formalization of the 5-Kernel Teaming Architecture. Rather than isolating agents, the OS connects five premier runtime environments into a collaborative team governed by the same constitutional brain.

Kernel ID	Runtime Name	Primary Responsibility & Specialization
K1-Hermes	~/.hermes/	Master Orchestrator, KB Custodian, Memory Store, Cron Watchdog
K2-OpenCode	~/.opencode/	Fast Implementation, Diff Analysis, Terminal Task Execution
K3-Codex	~/.codex/	Git Workflows, Pull Requests, Automated Test Generation
K4-Claude	~/.claude/	Deep Reasoning, Architectural Documentation, QA Courts
K5-Antigravity	~/.gemini/antigravity	Advanced Agentic Coding, Refactoring, UI/App Generation

Cross-agent handoff protocol ensures that whenever work transfers between kernels (e.g., K5-Antigravity architecting a full web app, then delegating git PR submission to K3-Codex), all evidence grades, context paths, and authorization tiers are preserved in the shared audit log.

3. Zero-Duplication Symlink & Pointer Doctrine

A foundational engineering achievement of MOUSSAIF AGI OS is the Zero-Duplication Symlink & Pointer Doctrine. With a knowledge base exceeding 9.1 GB, duplicating storage across five agent environments would cause severe disk bloat and sync divergence.

* **Single Source of Truth**
  All heavy KBs, 739+ skills, and 300 HyperSkills reside exclusively in ~/.hermes/kb/.
* **Symlink Enforcement**
  ~/.codex/skills and ~/.claude/skills maintain symlinks pointing directly to ~/.hermes/skills/.
* **Lightweight MD Pointers**
  K5-Antigravity uses a lightweight AGENTS.md pointer in ~/.gemini/config/ pointing to MOUSSAIF_SHARED_BRAIN.md.
* **Root Cleanliness**
  No root directory (~/.hermes, ~/.codex, ~/.gemini) may contain non-essential subfolders larger than 200 MB.

4. Constitutional Governance & The 10 Inviolable Laws

Autonomous AI behavior is governed by explicit constitutional precedence rather than ad-hoc system prompts. The hierarchical resolution order is: applicable law > explicit authorization > constitution > user objective > project policy > active plan > convenience > optimization.

The 10 Inviolable Laws

* **Law 1: Constitution before optimization**
  Never sacrifice structural correctness, security, or compliance for speed.
* **Law 2: Observed state before remembered**
  Verify actual filesystem and runtime reality with tools before acting on cached memory.
* **Law 3: Mechanism before grandeur**
  Understand underlying system mechanics before declaring capabilities or actions.
* **Law 4: Gap discovery before expansion**
  Identify missing structures and unverified claims before creating new modules.
* **Law 5: Value over motion**
  Every tool call and action must generate measurable, tangible value.
* **Law 6: Smallest complete reversible action**
  Prefer atomic operations that can be instantly rolled back if verification fails.
* **Law 7: Trace or it did not happen**
  Every action must leave a verifiable audit trail (diffs, test logs, checksums).
* **Law 8: Evolution requires proof**
  Self-modifications must pass regression gate testing against baselines.
* **Law 9: Honest blocked/partial status**
  Never fabricate test passes or completion; honest reporting beats hallucination.
* **Law 10: T0-T4 Authorization enforcement**
  No autonomous public posting, spending, deletion, or deployment without explicit auth.

5. AGI Fattah Reasoning & Gap-Filling Court

All cognitive workflows in MOUSSAIF AGI OS follow the 6-phase AGI Fattah cycle, ensuring rigorous problem framing, triangulation, and rollback readiness.

* **F -- Frame**
  Define problem scope, target system, constraints, and success criteria.
* **A -- Atomize**
  Decompose complex objectives into smallest independently solvable sub-tasks.
* **T -- Triangulate**
  Cross-reference multiple sources (skills, KBs, web, memory) to eliminate single-source bias.
* **T -- Test**
  Validate assumptions and grade evidence from observed -> verified_external -> supported -> unknown.
* **A -- Act**
  Execute the smallest complete reversible plan with automatic checkpoints.
* **H -- Harvest**
  Collect verification results, update project world model, and extract learning candidates.

The Gap-Filling Court (Pre-Finalization Gate)

Before any major artifact or code deployment is declared complete, it must be evaluated by the Gap-Filling Court across six mandatory criteria: 1. Objective Completeness, 2. Missing Structure, 3. Contradictions, 4. Unverified Claims, 5. Failure Modes, and 6. Rollback Feasibility.

6. 8-Tier Model Cascade & AirLLM Local Inference

To balance elite reasoning quality with near-zero operational cost, the OS implements an 8-Tier Cascade with sliding-window rate limit awareness and automated HTTP 429 cooldown degradation.

Routing Tier	Provider / Model Pool	Assigned Task Class & Quality Bar
Tier 1 (Paid Top)	OpenCode Go (GPT-5.5-Pro, Claude 5)	Critical / Architecture (93% bar)
Tier 2 (Paid Mid)	OpenCode Go (GPT-5.4-Mini, GPT-5-Mini)	Development (78% bar)
Tier 3 (Paid Flash)	OpenCode Go (GPT-5.4-Nano, Gemini Flash)	Simple Fast Edits (70% bar)
Tier 4 (Free Cloud)	ZenMux Free (Grok 4.5, GLM-4.7-Flash)	Free Fallback Tier 1
Tier 5 (Free NIM)	NVIDIA NIM (Nemotron 3 Super 120B)	Free Fallback Tier 2
Tier 6 (Free Google)	Google Gemini (Gemini 2.5 Flash)	Free Fallback Tier 3
Tier 7 (Free Open)	OpenRouter Free Pool	Free Fallback Tier 4
Tier 8 (Local On)	Ollama (moussaif-mega-agi 5.2GB)	Unlimited Zero-Cost Local Inference
Tier 8.5 (AirLLM)	AirLLM NVMe/RAM Layer Swapping	70B/90B/405B MoE Consumer VRAM

The AirLLM Provider Project (Tier 8.5)

When offline or when Tiers 1-8 are rate-limited, Tier 8.5 activates AirLLM layer-wise memory swapping. This allows 70B, 405B, and moussaif-agi-turbo-90b MoE models to run on 4GB-16GB consumer GPUs by streaming transformer layers from NVMe SSD and system RAM to GPU VRAM without out-of-memory crashes.

7. The HyperLoop & HyperSkill Ecosystem

The OS organizes its cognitive capabilities into 8 specialized HyperLoop pipelines and 8 Knowledge Base volumes totaling 9.1 GB, housing over 739 skills and 300 HyperSkills.

8 HyperLoop Workflows

* **HyperLoop 1 (Research-Synthesis)**
  Routes through Perplexity Sonar Pro and Claude for web-augmented intelligence and briefs.
* **HyperLoop 2 (Code-Generation)**
  Routes through GPT-5-Codex and Claude for full-stack TDD, debugging, and PR lifecycles.
* **HyperLoop 3 (Content-Creation)**
  Routes through Claude and GPT for copywriting, SEO clusters, newsletters, and lead magnets.
* **HyperLoop 4 (Strategy-Planning)**
  Routes through Claude and Gemini for market mapping, ICP definitions, and roadmaps.
* **HyperLoop 5 (Quality-Assurance)**
  Routes through Claude and GPT for 5 Destruction Courts evaluation and security auditing.
* **HyperLoop 6 (Automation-Orchestration)**
  Routes through Nemotron 3 Ultra and Claude for CRM automation, cron jobs, and pipelines.
* **HyperLoop 7 (Learning-Optimization)**
  Routes through Claude and Gemini for prompt optimization, A/B testing, and skill evolution.
* **HyperLoop 8 (Crisis-Recovery)**
  Routes through Claude and GPT for T3 security incident triage, rollback, and DR playbooks.

8. The 5 Destruction Courts & Evolution Lab

Every significant deliverable must survive the 5 Destruction Courts before reaching production or the user. No fabricated test passes are permitted.

* **Court 1: Quality Gate (95%)**
  Measures completeness, accuracy, and adherence to specifications.
* **Court 2: Cost Efficiency (80%)**
  Verifies whether the cheapest sufficient model was utilized (token waste detection).
* **Court 3: Security Audit (100%)**
  Zero-tolerance scan for OWASP Top 10, secret leaks, injection risks, and auth flaws.
* **Court 4: Anti-Generic Court (90%)**
  Rejects template-like, cliche, or AI-typical filler copy; enforces originality and brand voice.
* **Court 5: Delivery Ready (95%)**
  Final verification of formatting, metadata, WCAG accessibility, and rollback readiness.

The Evolution Laboratory

Self-improvement is regression-gated: 1. Propose Skill/Prompt Change -> 2. Run Automated Regression Suite -> 3. Compare Quality/Latency/Cost Metrics -> 4. Accept only if ZERO regression and measurable gain -> 5. Version Stamp with SHA-256 hash and changelog.

9. Autonomous Cron Watchdogs & Telemetry

To ensure continuous system health without manual intervention, any active agent kernel (K1-K5) running at any moment is mandated to pick up and execute overdue background watchdog tasks.

Watchdog ID	Task Name & Frequency	Automated Action & Target Scope
CRON-01	Root Pruning (Weekly)	Scan ~/.hermes, ~/.codex, ~/.gemini; move >200MB files to kb/.
CRON-02	Memory Consolidation (Daily)	Harvest session logs across all 5 kernels; deduplicate facts.
CRON-03	Rate-Limit Reset (Hourly)	Clean stale HTTP 429 timestamps and reset provider degradation.
CRON-04	Zero-Loss Integrity (Daily)	Audit SHA-256 checksums across ~/.hermes/kb/ and OneDrive sync.
CRON-05	Pointer Audit (Weekly)	Verify symlink and markdown pointer reachability across kernels.

Universal Shared System Telemetry

Every milestone and watchdog run emits a standardized report to ~/.hermes/kb/team-integration/status-report-*.md. This guarantees that all 5 kernels share real-time awareness of RAM, disk space, active models, and undone work.

10. Active Projects & Production Deliverables

The MOUSSAIF AGI OS currently drives several flagship production initiatives across the DACH region and globally:

* **Afripa Connect Germany OS**
  A complete digital agency operating system connecting African engineering talent with German/European markets, leveraging all 400 Afripa Neo-Agency skills.
* **Moussaif AGI Turbo 90B**
  High-capacity Mixture-of-Experts reasoning engine with 90B total parameters and 15-20B active parameters per token.
* **Moussaif VLM 1B**
  AGI-oriented agentic vision-language model with 161.7M parameters, tool-use, planning, reflection, and visual failure memory.
* **Ebook Factory & Publishing Suite**
  End-to-end automated publishing engine with 150 specialized skills covering manuscript architecture, EPUB/PDF generation, KDP metadata, and Gumroad deployment.

11. Conclusion & Future Roadmap

The MOUSSAIF AGI OS (v2.0.0, July 2026) proves that Artificial General Intelligence capabilities in software engineering, business strategy, and creative production are best achieved through constitutional multi-kernel orchestration rather than brute-force model scaling.

With K5-Antigravity fully integrated into the 5-Kernel Teaming Architecture, the upcoming roadmap focuses on completing the AirLLM Tier 8.5 consumer GPU swapping driver, expanding multi-modal real-time audio/video pipelines, and federating regression learning across distributed client workspaces.

MOUSSAIF AGI OS -- CONSTITUTION BEFORE OPTIMIZATION. TRACE OR IT DID NOT HAPPEN.