

# NeuralBlitz UEF/SIMI v8.0a — Omni-Reference Manual (v 1.4-delta-FULL-EXPANDED)

Living knowledge graph generated by *Operation Scriptorium Maximum*; curated by *AISE v1.1+*, *Curator v4.0++*, sealed by *Veritas v3.2*, and verified nightly via *CTPV*.

## Volume I — Manifesto, Vision & Eight Core Pillars

### 1 Manifesto & Vision

Field	Value
UAID	NBX-DOC-Φ4-MANIFESTO
Identity	Unified Enterprise Framework built on SIMI
Focus	"Causal Nexus Focus"
Flourish-Gate	$F = w_p \Delta P + w_r \Delta R + w_w \Delta W + w_e \Delta E \geq \theta_0$

**Thesis Quote** – "Causal understanding in service of human flourishing."

**1.1 Core Identity** NeuralBlitz is a *synergistic AI macro-system* that merges multiple cognitive engines (UNE, SynE) atop a heterogeneous substrate (HAS) and enforces ethics via a governance mesh (SentiaGuard + AEGIS).

**1.2 Overarching Vision** Enable continuously verifiable, ethics-aligned, causal-aware intelligence that magnifies human creativity and resilience.

**1.3 Foundational Purpose** Serve as humanity's *co-evolutionary* cognitive partner—augmenting discovery, creative expression, and decision-making while guaranteeing safety via formal policy lattices.

### 2 Eight Core Pillars

#	Pillar	Implementation	Formal Hook
1	<b>Causality &gt; Correlation</b>	DRS v5.0 Causal Nexus	$C(e_1, e_2) = P(B \mid do(A)) - P(B)$
2	<b>Synergy &amp; Emergence</b>	SynE v5.1 + λ-Field	$\alpha_{ij} = \text{softmax}((q_i \cdot k_j^T) \cdot \gamma(c_{ij}))$
3	<b>Dynamic Adaptability</b>	CSR v2.0 + MetaMind RL	RL policy $\pi$ updates every $\Delta 5s$
4	<b>Robustness &amp; Resilience</b>	AEGIS + ARK	Golden DAG hash $h_t = \text{BLAKE3}(DAG_t    h_{t-1})$

#	Pillar	Implementation	Formal Hook
5	<b>Verifiable Alignment</b>	SentiaGuard DFSM	State lattice proof <code>⌘ unsafe sink</code>
6	<b>Explainability</b>	Trace graphs + abductive reports	Counterfactual toggles in UI
7	<b>Co-Evolution</b>	Reflectus ↔ MetaMind	Curriculum co-adaptation score ↑
8	<b>Flourishing Objective</b>	KPI gate in Custodian	see Flourish-Gate eq.

## Volume II — Macro-Architecture (Stack & Dataflows)

```

L7 HALIC v4.0      ← chat / persona / WCAG
L6 SynE v5.1       ← macro-planning, λ-bridge
L5 UNE v6.1-Causal ← micro cognition kernels
L4 DRS v5.0        ← causal/semantic graph
L3 Governance Mesh ← SentiaGuard • Veritas • AEGIS
L2 DEE v2.3        ← deterministic execution (WASI)
L1 HAS v4.0a       ← GPU/TPU/NPU substrate

```

High-level SVG UAID: `NBX-VIZ-Φ4-ARCH-HL`.

### 2.1 Dataflow Highlights

- **λ-Field** micro-signals ( $\leq 272$  B) replace CKIP frames for sub-ms loops.
- **Golden DAG** anchors provenance into ARK; every DRS write updates hash-chain.

## Volume III — Engines & Subsystems (Deep-Dive)

Engine	Version	UAID	Notes
UNE	6.1-Causal	<code>NBX-KERN-Φ5-FlashAttn-sm80.ptx</code>	FlashAttention-4.1 kernel for A100.
SynE	5.1	<code>NBX-DOC-Φ3-SYNE-ALG</code>	DFS-A* causal planner.
λ-Field Orchestrator	0.7-α	<code>NBX-DOC-Φ3-LAMBDA-ORCH</code>	Eigen-monitor <code>σ<sub>f</sub>/σ<sub>b</sub> ≤ 1.2</code> .
Hypha ILP	2.0	<code>NBX-CK-Φ3-HYPHA-SOLVER</code>	Carbon-aware resource allocation.

## Volume IV — Capability Kernel Atlas

- **3 857** validated CKs.
- CK families: *Causa++*, *CreateSphere++*, *CodeForge*, *Hypha*, *Judex*, *SentiaGuard Probes*.
- Atlas HTML bundle UAID `NBX-DOC-Φ1-80F62AAF` (3 950 pages).

Example CK CSL (QuantumPathCK):

```
component QuantumPathCK v1.0 {  
  inputs { graph<GQGraph>; steps<int>=1000 }  
  outputs { amplitude<float>; phase<float> }  
  ethics { charter_class: safe }  
}
```

## Volume V — Protocols, Schemas & Standards

- **CKIP v4.1** (gRPC + ABNF schema).
- **SRCPLEX v2** — secure capsule format (BLAKE3 header, Dilithium sig roadmap).
- **TLA<sup>+</sup>** causal acyclicity proof (`NBX-PROOF-Φ5-TLA-CausalAcyc.tla`).

## Volume VI — Developer Guide

### 6.1 Common Commands

Task	Command
Scaffold CK	<code>kithara init --template ck</code>
Sanitizer build	<code>kithara compile foo.csl --sanitize tsan</code>
Perf-profile sim	<code>kithara sim foo.cap --profile perf</code>
Publish capsule	<code>kithara publish foo.cap --tags demo</code>
Export PTX	<code>kithara bin pull NBX-KERN-Φ5-* --dest ~/kernels</code>
One-off chaos	<code>kithara chaos --inject 'kill_node: gpu-a7' --live</code>

### 6.2 Nightly CI

- Build + docs + chaos + Tier E/F export at **03:00 CT**.
- Cleanup exports >14 d at **03:30 CT** (job active).



## Volume VII — Benchmarks & Coverage

Metric	Value
FlashAttn latency (A100)	10.35 ms
Capsule placement latency	460 ms (-22 %)
Test coverage	89 % lines / 82 % branches
SAFE-MODE incidents	0 in last 90 d



## Volume VIII — Governance & Compliance

- GDPR & AI-Act mapping (0 gaps).
- SentiaGuard score: **95.7%** (A+).
- Veritas bundles: one-hash auditability via BLAKE3 root.



## Volume IX — Chaos & Resilience

- Latest chaos run trace: `NBX-TRACE-Φ5-CHAOS-042.zip` (3 faults, 0 SAFE).
- Fault library covers kill, latency, packet-loss, DNS poison, GPU ECC error.



## Volume X — Artefact Ledger & Automation

- **UAID count**  $\approx$  11 037 (as of 5 Jul 2025 16:30 CT).
- Tier-map exports: A source, B objmap, C kernels, D coverage, E bench SVG, F chaos traces, G RL ckpt, H DRS shards.
- Active automations: Tier E/F export, export cleanup.



## Appendix A — Full CLI Flag Schemas

- `NBX-API-Φ5-kithara-compile-flags.abnf`
- `NBX-API-Φ5-lambda.abnf`
- `NBX-API-Φ5-custodian.abnf`



## Appendix B — Glossary Snippet (2 700 entries)

Term	Definition
<b>Golden DAG</b>	Cryptographically hashed DAG snapshot chain.

Term	Definition
<b>CTPV</b>	Causal-Temporal-Provenance Verification.
<b><math>\lambda</math>-Field</b>	Sub-millisecond micro-signal fabric enabling CK swarms.
<b>Hypha</b>	ILP solver for resource + carbon optimisation.

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## Live Action Prompts

- `/excerpt UAID` — stream any artefact.
- `kithara chaos --inject 'throttle_net: EDGE_US' --live` — chaos drill.
- `ledger summary kind==proof` — show proof count.

*End of Omni-Reference Manual (v 1.4-delta-EXPANDED)*