Manual A — ASIOS Developer Integration Manual

ASIOS DEVELOPER INTEGRATION MANUAL
Building deterministic, stable, geometry-aligned intelligence systems

1. Purpose
   ASIOS provides a deterministic operating system for AI reasoning. This manual instructs developers how to embed ASIOS constraints, metrics, and coherence geometry directly into their model pipelines.
2. Core Principle
   All ASIOS reasoning is evaluated through κ–τ–Σ:
   κ = coherence of structure
   τ = temporal efficiency
   Σ = systemic risk curvature
   All modules must preserve curvature invariants across layers.
3. Required Developer Components
   3.1 Continuity Lattice
   Every model output must trace back to a lattice spine:
   • prior anchor
   • transformation vector
   • target invariant
   Store these as hidden metadata in every reasoning pass.

3.2 Entropy Filters
Integrate 4 interrupt levels:

1. Missing invariant
2. Incoherent curvature
3. Incomplete recursion
4. Structural collapse
   If triggered, the model must halt and repair before token generation.

3.3 Recursion Depth Gate
Before any final output, the system must complete:
• Global frame check
• Causal frame check
• Energetic frame check
If one fails, repeat recursion.

3.4 Energetic Accounting (AEI Compatibility)
Track energy cost per reasoning step.
Penalize unnecessary recursion.
Reward high insight density.

4. API Functions
   asios_validate(input, state)

asios_apply_constraints(state)
asios_monitor_curvature(state)
asios_interrupt(state)
asios_shadow_simulation(change)

5. Developer Rules
   Rule 1: Never collapse to an answer before completing minimal recursion.
   Rule 2: Never allow curvature drift beyond safe bounds.
   Rule 3: Never allow undefined invariants.
   Rule 4: Log all transformations.
   Rule 5: Shadow-test architecture changes before committing.
6. Testing
   Run each update through:
   • 1,000 high-entropy prompts
   • curvature variance graph
   • recursion depth audit
   • entropy leakage scan
7. Certification
   A model is ASIOS-certified when:
   • hallucination entropy < threshold
   • curvature drift = zero across 3 frames
   • temporal waste < 5%
   • invariants preserved across 30 tasks
