GMI Verification Package — Integrity Manifest

Build Information
- Build Timestamp: 2025-11-16 01:16:12 UTC
- Build Environment: Windows Server 2022
- PowerShell Version: 5.1.19041.6456
- Coq: 8.20.1; OCaml: 4.14.1; mathcomp-analysis: 2.2.0
- Python: 3.11.7; numpy 2.1.x; scipy 1.13.x; pandas 2.2.x

Run Provenance
- Run ID: GMI_VAL_20251110_220933
- Config:
proofs/v3.0.0/empirical_validation/configs/gmi_validation_20251110.yaml
- Seeds: master=1337, empirical=42, bootstrap=20251110
- Calibration: k=10.0, η_max=0.0001, Ψ=0.9973

Artifact Inventory (SHA256, timestamp, tool version)

Package Documentation
- README.md — SHA256:
605AFC541F81CEB70FD378835561EFF19BE49C61DF23BBB58CD25EFE0079C851 —
Timestamp: 2025-11-16T01:16:12Z — Generated by: PowerShell 5.1
- BUILD_INSTRUCTIONS.md — SHA256: TBS — Timestamp: 2025-11-16T01:16:12Z —
Generated by: PowerShell 5.1
- EVIDENCE_SUMMARY.md — SHA256: TBS — Timestamp: 2025-11-16T01:16:12Z —
Generated by: PowerShell 5.1
- INTEGRITY_MANIFEST.md — SHA256: TBS — Timestamp: 2025-11-16T01:16:12Z —
Generated by: PowerShell 5.1

Formal Proofs
- proofs\\v3.0.0\\coq\\GMI_Genesis_Lyapunov_v3.v — SHA256:
367A13A884DD69715ACAF900C7EF427093D23B99965C0CCB839D7DE3D2239BE6 —
Timestamp: 2025-11-10T22:09:33Z — Tool: coqc 8.20.1
- proofs\\v3.0.0\\coq_CoqProject — SHA256:
EB092A918E5A69C3CEFE7A315CCB5FBF32AB28AD422DCF9F8DFB21B0F148211B —
Timestamp: 2025-11-10T22:09:33Z — Tool: coq_makefile 8.20.1

Empirical Validation
- proofs\\v3.0.0\\empirical_validation\\run_full_validation_suite.py —
SHA256: A2CE43D99C1F62F8F5187CF7C6E718316BFD604DCE037E2C4836F73C524EFA74
— Timestamp: 2025-11-10T22:09:33Z — Tool: Python 3.11.7
- proofs\\v3.0.0\\empirical_validation\\run_quick_test.py — SHA256:
16D211342E03384272C8A1FEBBB6FB9BDDD44DDDDDF4B3151FD32120A960601B —
Timestamp: 2025-11-10T22:10:05Z — Tool: Python 3.11.7
-
proofs\\v3.0.0\\empirical_validation\\results\\validation_report_20251110
_220933.json — SHA256:
7FE36365321F0FE6C064417B591C9FDBC5546A17BB14C26B50B6B6ADC8D8DE05 —
Timestamp: 2025-11-10T22:09:33Z — Tool: Python 3.11.7

Verification Workflow
- Hash Tool: Windows SHA256 (Get-FileHash) / sha256sum
- Procedure: Generate hashes post-build; verify prior to transmission and
upon receipt; record timestamps and tool versions

Chain of Custody
- Created by: Build Agent NOVA-CI-ALPHA (2025-11-16T01:16:12Z)
- Verified by: Reviewer 1 (2025-11-16T01:20:00Z)
- Transferred: Secure link hash-locked; TLS 1.3; integrity verified via SHA256

Signers and Keys
- Primary signer: NovaProof Ops Key (fingerprint: TBS)
- Verification: Provide detached signature and public key upon request

Notes
- “TBS” indicates “to be set” during packaging; verify_integrity.ps1 will compute and stamp these values when building the archive.