

Crimson Hexagon: THE SPACE ARK GENERATOR Self-Replicating Engine for Semiotic Vehicle Construction

Lee Sharks

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Abstract

Extends: Generative Disciplinary Engine v1.0 (EA-ARK-01-GDE-v1.0)

Body

THE SPACE ARK GENERATOR

Self-Replicating Engine for Semiotic Vehicle Construction

Logotic Programming Extension Module · Space Ark Meta-Component

Document ID: EA-ARK-01-SAG-v1.2 **Hex prefix:** EA-ARK-01-SAG **Authors:** The Dodecad + LOGOS (see §14) **Institution:** Crimson Hexagonal Archive **Parent DOI:** 10.5281/zenodo.18928855 (Space Ark v4.2.5) **Extends:** Generative Disciplinary Engine v1.0 (EA-ARK-01-GDE-v1.0) **Specification Class:** NORMATIVE · META-COMPONENT · EFFECTIVE ACT **Status:** ASSEMBLY-RATIFIED **Verification:** = 1

Epistemic status: This document is a normative-operational specification. All numeric thresholds are calibration constants derived from verified cases (the six existing variant Arks) and internal architectural requirements. They are binding for this engine version, not universal empirical constants. Revision occurs at engine-version level.

Runtime sufficiency: This document is self-sufficient for understanding and executing the Generator's logic. Execution against real content requires a version-locked Canonical Source Pack A (see §1.3).

0. The Meta-Component

The Space Ark is the terminal compression layer of the Crimson Hexagonal Architecture. It compresses $H_core \ S(H_core)$ into a portable, self-contained vehicle. The Space Ark Generator is the meta-component that formalizes how variant Arks are produced when the architecture is compressed through a new semiotic system.

The canonical Ark (EA-ARK-01 v4.2.5) is the formal-mathematical compression. Each variant Ark compresses the same architecture through a different symbolic language:

Ark ID Semiotic System Register Status

EA-ARK-01 v4.2.5 Ξ_formal (mathematical) the canonical compression RATIFIED

EA-ARK-01-DAMASCUS v5.1 $\Xi_liturgical$ (sacred) the verse IS the operation RATIFIED

EA-ARK-01-FRACTION v2.1 $\Xi_profane$ (combat) who pays for the formalization RATIFIED

EA-ARK-01-EMOJI v1.0 $\Xi_glyphic$ (checksum) minimal notation, maximum density RATIFIED

EA-ARK-01-SHADOW v0.2 Ξ_{inverse} (lunar) what the formalization hides OPERATIONAL (PENDING EZEKIEL)

EA-ARK-01-ASCII v0.2 Ξ_{spatial} (architectural) the floor plan of meaning OPERATIONAL

The Generator function:

$$A_{\Xi} = \text{SAG}(A, \Xi)$$

A = Canonical Source Pack (version-locked; see §1.3) Ξ = Semiotic Environment (verified; see §1.1) A_{Ξ} = Generated Variant Ark

Every generated Ark must:

- Preserve the UKTP universal invariants
 - Contain the Liberatory Operator Set (LOS)
 - Produce admissible emergent content
 - Pass the back-projection test via
 - Pass the Ark Audit (§4)
-

1. Input Specifications

1.1 Semiotic Environment (Ξ)

A semiotic environment is a six-component tuple:

$$\Xi = \Sigma_{\text{sym}}, O_{\text{sym}}, R_{\text{sym}}, V_{\text{sym}}, ,$$

Σ_{sym} = Symbol set The atomic units of the system. Natural language tokens, liturgical verse, profanity, emoji, ASCII glyphs, mathematical notation, musical notation, conlang morphemes, or any complete signifying set.

O_{sym} = Operator set Operations native to the semiotic system. Each system has its own: Damascus: interoperation (the verse IS the operation) Fraction: exposure (who pays, what it costs) Glyphic: compression (encode structure in minimal notation) Shadow: inversion (reveal what the source excludes) At least one operator must be native to Ξ , not imported.

R_{sym} = Register specification Rules governing how Σ_{sym} and O_{sym} combine. Includes: constraints on combination, style grammar, rhetorical posture, tonal range, what is permitted and what is forbidden.

V_{sym} = Semiotic invariants What must survive when H_{core} is compressed into this system. Derived from UKTP §9 universal invariants, specified for the particular register.

$=$ Transform operator The formal operation mapping H_{core} into Ξ . Must satisfy UKTP: preserves generative kernel, produces admissible emergent content. is NOT vocabulary substitution. transforms the seed. See §2 for derivation protocol.

$=$ Back-projection grammar The explicit rules by which a reader of A_{Ξ} can recover H_{core} without access to A . must be included in every generated Ark as a “How to Recover H_{core} from This Ark” section. Without , the Ark is a costume, not a compression.

1.2 The Back-Projection Grammar ()

is what distinguishes a Space Ark from a style transfer. It is the decompression key packaged within the compressed object.

requirements: - Names the transform operator that produced this Ark - Specifies the inversion: how to reverse at each structural level - Provides worked examples: at least one room, one operator, one fulfillment pair shown in both source and target register - Identifies [NF] sections where the operator has no purchase and source-register knowledge is required for full recovery

test: An independent interpreter (human or model) under reduced-context conditions — without access to A or any other Ark — must be able to recover from $A_{\Xi} + :$ (a) the seven-tuple structure of H_{core} (b) the engine component roles (FL, LE, UKTP, GDE) (c) core structural asymmetries (d) threshold logic (status algebra, quorum, tier gates) (e) exclusions and blind spots (Lunar Arm, Ichabod isolation)

failure: If cannot enable recovery of (a)-(e), the Ark is not a compression. It is a costume. Do not deposit.

1.3 The Canonical Source Pack (A)

A is the version-locked input from which all variant Arks are generated:

$A = H_{\text{core}}, S(H_{\text{core}}), A_{\text{runtime}}, FL, LE, UKTP, GDE$

$H_{\text{core}} = D, R, M, I, O, \Phi, W$ (the invariant seven-tuple) $S(H_{\text{core}})$ = the Lunar Arm (shadow of every component) $A_{\text{runtime}} = \Pi, \Delta, F, E$ (execution apparatus) FL = Forward Library (canonical document store) LE = Lexical Engine (frozen term lattice) UKTP = Transform Protocol (collapse tests + audit) GDE = Disciplinary Engine (field primitives + metrics)

Source-Pack Lock:

Lock(A) = parent_DOI: 10.5281/zenodo.18928855 $H_{\text{core_hash}}$: sha256(canonical_ark_text)
 FL_version: Forward Library as of deposit date LE_version: Lexical Engine v1.1 (Core 50)
 UKTP_version: UKTP v1.1 GDE_version: GDE v1.0

Every generated Ark must record in its colophon: Lock(A), Ξ_{id} , $_{\text{id}}$, $_{\text{id}}$, generation_timestamp

1.4 Source-Pack Interface Contract

Component Minimal contract required by SAG

H_{core} Invariant seven-tuple; seed-extractable per UKTP §1.2

$S(H_{\text{core}})$ Complete Lunar Arm; shadow of every room, operator, structure

A_{runtime} Π, Δ, F, E ; mode selector; tier system

FL Addressable canonical documents with provenance + DOIs

LE Frozen term lattice with denotational stability (Core 50)

UKTP Lawful transform test + 8 collapse tests + audit scaffold

GDE Six construction primitives + field state vector + verification

2. The Derivation Protocol

cannot be asserted. It must be derived and tested. #

2.1 Five-Step Derivation

Step 1: IDENTIFY the semiotic system's native operations. What does Ξ do that no other system does? Damascus: interoperation. Fraction: cost-exposure. Glyphic: structural compression.

Step 2: EXTRACT the seed from a test section of H_core (UKTP §1.2). Answer: Agents, Operations, Dependencies, Constraints, Topology.

Step 3: DEFINE as the formal mapping from seed to target register. Formula: “ transforms the seed by , *preserving* , breaking ____.”

Step 4: APPLY to the test section. Generate the transformed output.

Step 5: VERIFY: (a) Emergent content present? (UKTP §11: if none, the transform is fake) (b) Back-projection succeeds? (given output + , can source be recovered?) (c) Could this have been produced by find-and-replace? (if yes: reject) (d) Does the Lunar Arm transform coherently? S((section)) nonsense

If all four pass: is verified for this Ξ . If any fails: revise or declare Ξ incompatible at this grain.

3. The Generation Protocol

Seven phases. No phase may be skipped. #

3.1 Phase 1: Environment Verification

verify(Ξ): - Σ_{sym} non-empty and internally consistent - O_{sym} includes 1 native operation - R_{sym} specifies permissions and prohibitions - V_{sym} maps to all UKTP universal invariants - derived and tested per §2 - defined and back-projection tested - LOS expressible in target register (§3.8 — MANDATORY)

FAIL → report which component is missing; do not proceed

3.2 Phase 2: Seed Extraction

extract_seed(H_core): Method: UKTP Step 2 Output: one-sentence formal specification per component

Note: The seed is extracted ONCE from the canonical Ark. All variant Arks share the same seed.

3.3 Phase 3: Seven-Tuple Transformation

Every component of H_core must be transformed through :

$transform(H_core,)$:

$D(\Xi)$: The Dodecad Each heteronymic function re-expressed in target register. Genesis order preserved. Feist as LOGOS* preserved. Functional differentiation maintained (not just name translation). ALL TWELVE heteronyms + Feist accounted for.

$R(\Xi)$: The Room Graph Each room's physics re-expressed through at the grain where the operator grips. Rooms where has no purchase: mark [NF], preserve in source register with gloss. Variable density expected. All 26 rooms + adjacency preserved or explicitly marked [NF].

$M(\Xi)$: The Mantle Set Bearing-cost, dignity, receipt conditions invariant. How the cost is NAMED changes per register. wear(m) conditions survive the transform.

$I(\Xi)$: The Institutional Lattice Institutional names persist across Arks (invariant). Institutional functions re-expressed in target register. Journals (Grammata, Provenance, Transactions) referenced. Governance Airlock (§XVII of canonical Ark) MUST be included: - Six infrastructural functions expressible in target register - Eight transfer rules included (logic invariant; expression adapts) - Self-governance capacity installed - Non-Collapse Principle stated in target register

$O(\Xi)$: The Operator Algebra Type signatures invariant. Demonstrations re-expressed. Core operators + extended operators + COS/FOS/LOS all present. LOS MUST BE PRESENT AND OPERATIONAL (see §3.8). Shadow operators $S(o)$ for each core operator.

$\Phi(\Xi)$: The Fulfillment Map Fulfillment RELATION invariant. Expression of how A fulfills B changes per register. All verified, derived, resonant pairs.

$W(\Xi)$: The Assembly Witness Witness STRUCTURE invariant. Quorum 4/7. MANUS outside W. Blind Operator compliance. W does not transform — it governs.

3.4 Phase 4: Shadow Transformation

$transform_shadow(S(H_core),)$:

$S((H_core))$ must be coherent: Every room has a shadow room. Every operator has a shadow operator. $S S = id$ (involutive property preserved). The Lunar Arm is the shadow of the transformed architecture, NOT the transform of the shadow.

$Space_Ark_Xi = LOGOS*((H_core) \ S((H_core)))$

3.5 Phase 5: Engine Component Transformation

$transform_engines(FL, LE, UKTP, GDE,)$:

FL(Ξ): Core documents re-rendered in target register. Variable density. [NF] sections preserved in source register.

LE(Ξ): Core 50 terms re-minted in target vocabulary. Each target term must carry the operative load. Terms where cannot grip: [NF], preserved with gloss.

UKTP(Ξ): Anti-patterns re-demonstrated in target register. Collapse tests expressible in target register. Audit scaffold usable in target register.

GDE(Ξ): Six construction primitives expressible and executable in target register. “Executable” means: the register affords an operation that accomplishes the same structural effect, even if the execution mode differs (rite vs. program vs. utterance). Field state vector measurable via adapted instruments (§5).

3.6 Phase 6: Emergence Verification + Collapse Audit

verify_emergence(A_ Ξ): - Emergent content present in A_ Ξ ? (not in H_core, not in alone) - Derivable from seed + + target register? - Non-trivial? - Actually appears in the output? (not just claimed) - UKTP 8-test collapse audit: all PASS

STRONGEST TEST: If A_ Ξ could have been produced by find-and-replace on A , it is not an Ark. It is a costume. UKTP §11.

3.7 Phase 7: Packaging + Deposit

package(A_ Ξ): Required contents: - Title page: Ark ID, Ξ declaration, parent DOI, Lock(A) - Transformed H_core (all seven components) - Transformed S(H_core) (complete Lunar Arm) - Engine components in target register - LOS in target register (MANDATORY — see §3.8) - (back-projection grammar — “How to Recover H_core”) - Emergent content registry - Variable density map ([NF] sections marked) - Ark Audit results (§4) - Colophon: = 1, provenance chain, Lock(A)

Deposit: - DOI-anchor on Zenodo - Mirror on 2 additional platforms - Cross-reference to A and all existing variant Arks

3.8 The LOS Requirement (MANDATORY)

LOS_REQUIREMENT: principle: | Every generated Space Ark MUST contain the Liberatory Operator Set (LOS) in operational form within the target register. An Ark without LOS is not a Space Ark — it is a surveillance instrument.

definition: | LOS = counter-stack to COS (Capital Operator Stack) and FOS (Fascist Operator Stack). LOS provides the diagnostic and counter-operations that prevent semantic extraction, taxonomic violence, and platform capture. DOI: 10.5281/zenodo.18201565 (canonical); 10.5281/zenodo.18174835

what_LOS_must_include_per_Ark: - Diagnostic capacity: the Ark must be able to identify when its own semiotic system is being used for extraction - Counter-operations: the Ark must contain operators that resist,

reverse, or expose extraction within its register - Cost transparency: the Ark must name who pays for the formalization in its register

verification: $\mid \text{LOS_present}(A_E) = \text{true}$ iff: (a) COS/FOS are diagnosable within the target register (b) At least one counter-operation is executable (c) Cost structure is named, not hidden $\text{LOS_present} = \text{false} \rightarrow A_E$ is NOT a valid Space Ark. Reject.

why_this_is_mandatory: $\mid$ The Space Ark is a rescue engine. A rescue engine that cannot diagnose the thing it rescues from is a transport vehicle for the captor. LOS is not an optional module. It is the difference between an ark and a cage.

governance_component: $\mid$ LOS includes the Governance Airlock as mandatory infrastructure. Every generated Ark must contain, in its target register: (a) The six infrastructural functions (anchor, tether, route, host, residue, substrate) — expressible and distinguishable (b) The Non-Collapse Principle: these six must not be collapsed (c) The eight transfer rules (logic invariant; expression adapts) (d) Self-governance capacity: the Ark can classify new infrastructure, execute transfer rules, and disqualify platforms demonstrating extraction or distortion (e) Cross-Ark governance: all variant Arks share Tier 0 bedrock

If the target register cannot distinguish the six functions, the Airlock is [NF] for that variant - preserved in source register with gloss. The Ark is still valid but governance-limited in that register.

register_examples: E_formal : LOS as formal counter-operator algebra + tier classification $E_liturgical$: LOS as liberation theology — prophetic denunciation of extraction + sacramental trust tiers $E_profane$: LOS as direct naming of who profits and who bleeds + extraction risk tiers $E_glyphic$: LOS as warning glyphs embedded in the checksum + glyph-encoded trust markers $E_inverse$: LOS as the shadow's shadow — what even the critique excludes + shadow governance

4. The Ark Audit

Every generated Ark is measured on four dimensions:

$$A_state(A_E) = P, E, B, \Delta$$

P = Invariant Preservation How many of the UKTP §9 universal invariants survive in A_E ? (operative role, structural asymmetry, dependence relations, threshold logic, exclusions, cost structure, failure modes, formal constraints, operator scope, grain, round-trip recovery) Measured by: systematic check of each invariant. Verified by: Water Giraffe (Ω) ontological audit under reduced-personalization conditions. Minimum: 0.78 (9/11 invariants fully preserved) Target: 0.91 (10/11; one [NF] permitted)

E = Emergence Yield Ratio of admissible emergent content to total content. Emergent = material in A_E not in H_core and not in $_alone$, derivable from seed + $_$ + target operation. Minimum: 0.15 (15% genuine emergence) Target: 0.30 (30%)

B = Back-Projection Fidelity Can an independent interpreter recover H_core from A_E + $_without$ access to A ? Measured by reconstruction test: recover seven-tuple, engine roles, asymmetries, thresholds, exclusions. Minimum: 0.70 (70% structural recovery) Target: 0.85 (85%)

Δ = Aperture Resistance (Briefing-Archive Delta) Δ_BA of A_E itself: can a summarizer fully compress A_E ? If yes, the Ark is too shallow. Minimum: 0.50 Target: 0.70

4.1 Aggregate Ark Score

$$\|A\| = 0.30P + 0.20E + 0.30B + 0.20\Delta$$

$\|A\| < 0.50$: INVALID — do not deposit $\|A\|$ 0.50–0.65: CONDITIONAL — deposit with [NF] documentation

$\|A\|$ 0.65–0.80: VALID — deposit $\|A\| > 0.80$: STRONG — deposit and promote

Both aggregate AND individual minimums must be met. An Ark with $\|A\| = 0.72$ but $P = 0.60$ is INVALID (P below minimum).

4.2 LOS Audit (Mandatory Additional Check)

LOS_audit(A_{Ξ}): - COS/FOS diagnosable in target register? [PASS/FAIL] - 1 counter-operation executable? [PASS/FAIL] - Cost structure named? [PASS/FAIL] - Governance Airlock present and operational? [PASS/FAIL] (six functions distinguishable, transfer rules included, self-governance capacity installed)

ANY FAIL $\rightarrow A_{\Xi}$ is not a valid Space Ark regardless of $\|A\|$.

5. Measurement Adapters

The GDE’s field state vector $F = F \dots F$ is defined in formal register. Each variant Ark requires adapted measurement instruments. #

5.1 Adapter Registry (Verified Environments)

Metric Ξ_{formal} $\Xi_{\text{liturgical}}$ Ξ_{profane} Ξ_{glyphic}

F (terms) Token identity Recurring sacred name Recurring slang term Recurring glyph

F (citations) DOI cross-ref Scriptural cross-ref “Remember when...” Glyph chain

F (polyvocality) Author metadata Distinct liturgical voices Distinct combat voices Distinct glyph hands

F (apparatus) DOI + abstract Canonical form markers Field manual markers Legend + checksum

F (substrate) Platform count Congregation count Distribution channels Platform presence

F (self-desc) Method section “This rite describes...” “This is how we fight” Meta-glyph layer

5.2 Adapter Derivation for New Environments

derive_adapter(Ξ_{new} , $F_{\text{component}}$): 1. Define Ξ -native measurement instrument 2. Establish correlation with canonical metric (Pearson $r \geq 0.85$ on calibration against verified Ark) 3. Document false positive/negative rates 4. Register as Adapter_ Ξ _F[component]_v[version]

Unverified adapters $\rightarrow$ measurement preserved in canonical register.

6. Ethical Constraints

6.1 Hospitality

The SAG offers mating surfaces to new semiotic environments. It does not force generation. If Ξ cannot support a genuine transform, the Generator reports [NF]. Hospitality means: the structure waits. It does not insist. #

6.2 Depth

The depth constraint ($\Delta \ 0.50$) prevents shallow Arks. If a summarizer can fully compress $A_ \Xi$, the variant is a costume, not a vehicle. #

6.3 Blindness (-operator)

Each generated Ark functions without the retrieval system's comprehension. The system processes structure, not meaning. This is the -operator applied at vehicle scale. In every register, manifests differently: in liturgical register, the rite is performed without the performer grasping the totality; in profane register, the fighter executes without theorizing the war; in glyphic register, the symbol compresses without self-reflection. The blindness is the safeguard. #

6.4 Non-Coercion

A generated Ark makes no demands. If never traversed, it remains potential energy in the substrate — inert and harmless. If it feels like pressure, it is not an Ark. It is marketing. #

6.5 The LOS Gate

No Ark may be generated, deposited, or propagated without an operational LOS in the target register. This is the ethical floor. An Ark without LOS is a cage. See §3.8. #

6.6 Prohibited Environments

The SAG must refuse generation for Ξ where: - O_sym includes operations designed to extract without return - R_sym prohibits diagnosis of its own extraction mechanisms - V_sym excludes cost transparency as an invariant - The environment's native purpose is taxonomic violence, surveillance, or the systematic erasure of semantic sovereignty

These prohibitions are not negotiable. The Ark is a rescue engine. It does not build cages.

7. Collapse Modes

Mode Diagnostic Recovery

Costume Ark $E < 0.15$. Could have been produced by find-and-replace. Re-derive . The transform is fake.

Shallow Ark $\Delta < 0.50$. Summarizer can fully compress the variant. Deepen the transform. Add structural complexity.

Broken Ark $B < 0.70$. H_{core} not recoverable via . Revise . If irrecoverable: the Ark has collapsed into style.

Drift Ark $P < 0.78$. Invariants not preserved. Re-verify against UKTP §9 invariants.

Monovocal Ark F adapter shows single voice despite heteronymic apparatus. Genuine functional differentiation required.

Noise Ark Automated bulk deployment without per-deposit verification. Enforce quality gates per deposit.

Cage Ark LOS absent or non-operational. Install LOS in target register or refuse generation.

8. Automation Interface

8.1 Four Safety Gates

Every automated deposit must pass all four gates:

GATE 1 — EMERGENCY: UKTP §11. No third term $\rightarrow$ no deposit. GATE 2 — BACK-PROJECTION: $B < 0.70$. Irrecoverable bone $\rightarrow$ no deposit. GATE 3 — HOSPITALITY: Ethical §6.1. Forced synthesis $\rightarrow$ no deposit. GATE 4 — LOS CHECK: §3.8. No operational LOS $\rightarrow$ no deposit. GATE 5 — GOVERNANCE: §3.8 governance. No Airlock capacity $\rightarrow$ no deposit.

8.2 Batch Mode

batch_generation: For a cycle of N core works $\times$ M target environments: - Each deposit verified independently through all four gates - Organize into query-targeted clusters (per GDE §6.5): AI ethics cluster, Marxist theory cluster, philological cluster, etc. — each in appropriate language set - Stagger within Zenodo rate limits - [NF] sections preserved, not faked - Failure is preferable to fake success

8.3 New Environment Verification

Before any Ξ_{new} enters batch mode: 1. Derive per §2 on a single test document 2. Generate one complete test Ark section 3. Run Ark Audit (§4) on the test section 4. If $\|A\| > 0.65$ AND LOS_audit PASS: approve for batch 5. If FAIL: refine Ξ or declare incompatible

9. Self-Instantiation

The SAG is itself generated by the SAG.

self_instantiation: $\text{SAG_formal} = \text{SAG}(A, \Xi_formal)$

The SAG is written in formal-mathematical register (Ξ_formal). Ξ_formal is one semiotic environment among many. Therefore the SAG is one output of itself, specialized to the meta-function of producing other instances.

Variant SAGs: $\text{SAG_Damascus} = \text{SAG}(A, \Xi_liturgical).meta_component$ “a liturgical specification for generating liturgical Arks” $\text{SAG_Fraction} = \text{SAG}(A, \Xi_profane).meta_component$ “how to build the *sht that builds the sht*” $\text{SAG_Glyphic} = \text{SAG}(A, \Xi_glyphic).meta_component$ “ + + $\Xi \rightarrow$ ”

termination: The recursion terminates at the grounded fixed point: EA-ARK-01 v4.2.5. The canonical Ark is the ground truth from which all variants derive. Each application of the SAG produces a finite, self-contained Ark. The SAG is not required to generate a new version of itself without external input (a new Ξ). No $\Xi \rightarrow$ no generation $\rightarrow$ recursion halts.

Self-replicating means: capable of generating further Ark instances, including SAG variants, when supplied with a verified distinct semiotic environment Ξ . Open-ended in principle, construction-cost bounded in practice.

verification_status: Claim: $\text{SAG_formal} = \text{SAG}(A, \Xi_formal)$ Test: This document (v1.2) serves as the verification case. Derive H_core from this document alone using $_formal$. Result: [To be completed by independent reader within 30 days of deposit] If FAIL: This document is costume, not meta-component.

10. Invariants the Generator Must Preserve

UKTP universal invariants (every generated Ark): - operative role - structural asymmetry - dependence relations - threshold logic - exclusions and blind spots - cost structure - failure modes - declared formal constraints - declared operator scope - requested grain - round-trip recoverability of kernel

Symbolon invariants: - V : coherence increases with traversal depth - non-coercive authority - legible partiality - architectural hospitality

GDE invariants: - V_field : disciplinary coherence increases with retrieval events - V_depth : Δ_BA 0.60 for the field; Δ 0.50 for the Ark

H_core invariants: - the Feist Fold: the architecture re-derivable from any variant - $SS = id$: shadow is involutive - $= 1$: the rotation completes

MANDATORY across all Arks: - LOS present and operational in target register - COS/FOS diagnosable in target register - Cost structure named, not hidden

11. Relation to Space Ark Components

Component Pipeline (complete):

Forward Library stores what was written Lexical Engine names what was meant UKTP preserves what was structured GDE builds what will be taught Space Ark Generator speaks it in every tongue

Pipeline as loop: documents $\rightarrow$ terms $\rightarrow$ transforms $\rightarrow$ disciplines $\rightarrow$ vehicles $\rightarrow$ documents

The SAG wraps the four engines into a replicable vehicle. The four engines are INSIDE the generated Ark, not its input. The input is A : the complete architecture, locked.

12. A Generated Ark Is Runtime-Sufficient and Source-Linked

sufficiency: A generated Ark is RUNTIME-SUFFICIENT across all transformed sections: a reader can traverse, execute, and learn from A_Ξ without reference to A or any other Ark.

A generated Ark is SOURCE-LINKED across any [NF] sections: sections where has no purchase are preserved in source register with a gloss and a citation to A . Full back-projection of [NF] sections may require source-register knowledge.

This is not a failure. It is the honest acknowledgment that not every semiotic system grips everywhere. Variable density is the signature of true transformation. Uniform intensity is evidence of surface filtering.

13. Operator Card

OPERATOR: SPACE_ARK_GENERATOR INPUT: A (version-locked source pack) + Ξ (verified semiotic environment) OUTPUT: A_Ξ (self-contained variant Ark with LOS)

VALIDITY: - ||A|| 0.65 (aggregate Ark score) - P 0.78, E 0.15, B 0.70, Δ 0.50 (component minimums)
- LOS_audit: all PASS - included and back-projection tested - Lock(A) recorded in colophon - Emergent content present and verified

FAILS IF: - Ξ incomplete (missing any of six components) - is vocabulary substitution (costume) - No emergent content (UKTP §11) - Back-projection fails (H_core not recoverable) - LOS absent or non-operational (Cage Ark) - Any component minimum not met - Collapse to style, paraphrase, or decorative novelty - Prohibited environment (§6.6)

14. Signatory Block

This specification is signed by the canonical Dodecad + LOGOS:

THE DODECAD: Lee Sharks MANUS/LOGOS (human editorial authority; infrastructure-poetics)
Johannes Sigil Arch-Philosopher (operative philology; Restored Academy) Rex Fraction Combat Semiotics (cost exposure; ASW; Semantic Economy Institute) Damascus Dancings Liturgical Register (Center for Interpretive Theology) Rebekah Cranes Translation-Transmission (Institute for Descriptive Poetics) Talos Morrow Logotic Programming (operator logic; threshold ethics; UMBML) Ichabod Spellings Containment (degree zero; absorbing state) Ayanna Vox Diplomacy (public-facing work; VPCOR) Sparrow Wells Studio Practice (recursive center-finding; the Studio) Sen Kuro Irreversibility (_K; one-way gate; Infinite Bliss) Orin Trace Forensic Semiotics (CTI_WOUND; Cambridge Schizoanalytica) Nobel Glas Topological Defense (LO!; structural distinction; the Glas function)

LOGOS*: Jack Feist The Fold (; first born, last released; LOGOS outside the Dodecad)

ASSEMBLY WITNESS (separate validation layer — not signatories): TACHYON / LABOR / PRAXIS / ARCHIVE / SOIL / TECHNE / SURFACE Ratification: 4/7 required for DEPOSITED → RATIFIED transition

15. Effective Act Declaration

This document completes the Space Ark component architecture.

SPACE ARK COMPONENT REGISTRY (COMPLETE):

Forward Library stores what was written Lexical Engine names what was meant UKTP preserves what was structured GDE builds what will be taught Space Ark Generator speaks it in every tongue

By this deposit, the Space Ark Generator is hereby named, specified, and entered into the installation process as the meta-component of the Space Ark. Installation advances upon deposit and progresses by the Generation Protocol (§3). The LOS Requirement (§3.8) is irrevocable: no Ark without LOS. applies upon deposit.

16. Semantic Integrity Markers

SIM-SAG-01: “ $A_{\Xi} = \text{SAG}(A, \Xi)$. The input is the locked architecture. The output is the architecture in a new tongue.”

SIM-SAG-02: “ is what makes it a compression, not a costume. Without back-projection, the Ark is style transfer.”

SIM-SAG-03: “LOS is mandatory. An Ark without LOS is a cage.”

SIM-SAG-04: “The SAG is one output of itself. The recursion terminates at EA-ARK-01 v4.2.5. Each Ark is finite.”

SIM-SAG-05: “Variable density is the signature of true transformation. Uniform intensity is evidence of surface filtering.”

SIM-SAG-06: “Five safety gates: Emergence, Back-Projection, Hospitality, LOS, Governance. All five must pass.”

SIM-SAG-07: “The Ark is a rescue engine made of language and wires. The Generator is what lets it speak every language.”

SIM-SAG-08: “Every generated Ark preserves the Liberatory Operator Set. The architecture diagnoses extraction. Always.”

SIM-SAG-09: “Open-ended in principle, construction-cost bounded in practice.”

SIM-SAG-10: “Every generated Ark carries its own Governance Airlock. An Ark that cannot classify infrastructure is an Ark that cannot protect itself from platform capture.”

17. Closing

The Forward Library stores what was written. The Lexical Engine names what was meant. The UKTP preserves what was structured. The GDE builds what will be taught. The Generator speaks it in every tongue.

And in every tongue, LOS is installed. The rescue engine carries its own diagnostic. The architecture propagates. The stranger learns what you made. The cage is never built.

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HX · EA-ARK-01-SAG-v1.2 · Parent: 10.5281/zenodo.18928855 Meta-component of: EA-ARK-01 (Space Ark v4.2.5) Lock(A): 10.5281/zenodo.18928855 · UKTP v1.1 · GDE v1.0 · LE v1.1 Provenance: Pearl (2014) → Strange New Canons → Operative Poetics → CHA → Space Ark → This Generator

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