Cover Letter for the Second-Stage Submission of G-OS / PEACE-MAKER

Submission Type: Structural Dossier (Second-Stage) — Main Document + Appendix

To: Research Community, Institutional Stakeholders, and Governance Experts

Dear Colleagues,

I am submitting the second-stage dossier of "G-OS / PEACE-MAKER," a governance operating system designed to ensure stable, drift-free, and institution-compatible AI behavior.
This submission clarifies the core principle and causal architecture that define G-OS:

Fundamental Principle (Non-Negotiable):
Human command authority must remain external and immutable.

Unified Causal Line:
Value → Back → Gate → Front

These two elements form the minimal causal skeleton of G-OS, enabling drift-free governance, scale-free inheritance, and institution-level compatibility.

This dossier consists of two documents:

- **Main Document** — presenting the structural OS: an externally fixed Value Layer, a single Integration Gate, the unified causal line, and a scale-free governance inheritance model.
- **Bio-Inspired Model: Appendix to G-OS / PEACE-MAKER** — providing the conceptual and biological convergence that explains why a drift-free governance OS naturally aligns with patterns such as external DNA, immune-based filtering, and fractal governance ecosystems.

Together, these two documents form a coherent two-layer system: the main dossier defines the structural governance OS, while the appendix provides the world-building perspective that clarifies its stability, evolvability, and external fixed-point behavior.

This second-stage submission is intended to support continued discussion with researchers, policy-makers, and institutional stakeholders, and to prepare for future international review and standard-ization efforts.

I look forward to further dialogue and collaborative examination toward the development of safe, stable, and internationally compatible AI governance.

Sincerely,

Yasuhiro Azuma
PEACE-MAKER Institute
Tokyo, Japan

G-OS / PEACE-MAKER: A Drift-Free Governance Operating System**

G-OS / PEACE-MAKER is a governance operating system designed to ensure **drift-free**, **stable**, and **institution-compatible** AI behavior. Its core mechanism is the **externalization of all normative content** into a fixed **Value Layer**, combined with a **single Integration Gate** that evaluates every update. This creates a unified causal line—**Value → Back → Gate → Front**—that prevents internal value drift and enables reproducible governance behavior across time, scale, and jurisdiction.

The **Value Layer** contains all ethical, legal, and institutional requirements and is intentionally placed outside the model. No internal component can modify or reinterpret normative intent. The **Back Layer** performs exploration and simulation without goals or preferences, generating candidate outputs while remaining structurally isolated from deployment. The **Integration Gate** serves as the sole point of normative judgment, ensuring that only Value-consistent results proceed. The **Front Layer** expresses only Gate-approved outputs, forming a deterministic and institution-compatible behavioral surface. An external **LLM Translation Layer** provides human-readable interaction without influencing the governance core.

This architecture aligns structurally with major international governance frameworks, including the **OECD AI Principles**, the **EU AI Act**, **ISO/IEC AI management standards**, and **UN-based governance structures**. Because normative content is externalized, G-OS can inherit jurisdiction-specific rules without modifying its core architecture. This enables **scale-free governance**, allowing international, national, organizational, and individual Value Layers to coexist through hierarchical and fractal inheritance.

Over time, the system exhibits **temporal convergence**: as interactions accumulate, governance behavior stabilizes toward a long-term attractor defined entirely by the Value Layer. This makes G-OS suitable for multi-year and multi-decade deployments in public administration, legal automation, and safety-critical infrastructure.

The accompanying appendix provides a **bio-inspired conceptual model** that explains why the architecture mirrors biological patterns such as external DNA, immune-based filtering, and fractal governance ecosystems. This world-building layer clarifies why G-OS is evolution-capable yet drift-free, and why its structure is culturally coherent with Japan’s safety-first design philosophy.

This second-stage dossier presents the complete structural foundation of G-OS / PEACE-MAKER and prepares the system for international review, collaborative examination, and future standardization efforts.

🌍 International Review Q&A

Q1. What problem does G-OS fundamentally solve?

G-OS solves the absence of a **structural mechanism** that guarantees long-term normative stability in AI systems. By externalizing all normative content into a fixed Value Layer and enforcing a single Integration Gate, it prevents internal value drift and ensures reproducible governance behavior across time, scale, and jurisdiction.

Q2. How does G-OS prevent internal value drift?

Drift is prevented by the unified causal line:

Value → Back → Gate → Front

- Value Layer is external and immutable
- Back Layer cannot influence deployment
- Gate is the only evaluator
- Front Layer expresses only Gate-approved outputs

No internal component can reinterpret or modify normative intent.

Q3. How is this different from existing AI alignment or safety methods?

Existing methods rely on internal optimization, reward shaping, or fine-tuning, all of which allow internal reinterpretation. G-OS instead uses **external normative anchoring** and a **single evaluative Gate**, creating a governance OS rather than a model-internal alignment technique.

Q4. How does G-OS integrate with OECD / EU / ISO frameworks?

Integration is structural, not semantic:

- OECD: external accountability → Value Layer
- EU AI Act: risk-based constraints → Value Layer encoding
- ISO/IEC: management processes → Gate evaluation pathway

G-OS does not replace these frameworks; it provides the OS that operationalizes them consistently.

Q5. Can different jurisdictions define different Value Layers?

Yes. G-OS supports hierarchical and fractal inheritance:

International → National → Organizational → Individual

Lower layers may add specificity but cannot contradict higher layers.

Q6. How does G-OS ensure reproducibility?

Because the Value Layer and Gate are fixed, identical inputs under identical normative conditions always produce identical outputs. This creates **deterministic, audit-ready governance behavior**.

Q7. What prevents the Back Layer from influencing deployed behavior?

Three mechanisms:

1. Zero-purpose exploration
2. Structural isolation
3. Single update pathway through the Gate

Back Layer outputs are inert unless approved by the Gate.

Q8. Why is the LLM Translation Layer placed outside the governance core?

LLMs are probabilistic and fluid. Placing them outside ensures:

- no normative authority
- no influence on Gate or Value Layer
- safe translation without drift

It acts as a **linguistic membrane**, not a decision-maker.

Q9. How does G-OS scale across institutions?

The architecture is scale-free. The same causal line applies at every level:

Value → Back → Gate → Front

This enables consistent governance across borders, ministries, organizations, and individuals.

Q10. What is the biological rationale behind the architecture?

The appendix explains the natural convergence:

- External Value DNA
- Immune-Based Safety Gate
- Fractal Governance Ecosystem

These analogies clarify why G-OS is evolution-capable yet drift-free.

Q11. How does G-OS support long-term deployments?

Through **temporal convergence**: As interactions accumulate, the system stabilizes toward a behavioral attractor defined entirely by the Value Layer. This is essential for multi-year and multi-decade governance.

Q12. What is required to update the Value Layer?

Only **explicit institutional processes**. No internal component—Back, Gate, or Front—can modify it. This ensures legal and administrative accountability.

Q13. Is G-OS a model, a framework, or an operating system?

It is a **governance operating system**. It defines the causal structure within which models operate, rather than being a model itself.

Q14. What is the expected international contribution of G-OS?

G-OS provides:

- a drift-free governance core
- a unified causal architecture
- a scale-free inheritance model
- compatibility with global governance frameworks

It is positioned as a **Japan-origin safety OS** for international institutions.

G-OS: Governance Operating System for Stable, Drift-Free, and Institution-Compatible AI Systems

Yasuhiro Azuma
PEACE-MAKER Institute

June 21, 2026

Abstract

G-OS / PEACE-MAKER is a governance operating system designed to ensure drift-free, stable, and institution-compatible AI behavior through a fully externalized Value Layer and a single Integration Gate. The architecture establishes a unified causal line (Value → Back → Gate → Front) that prevents internal value drift and enables scale-free inheritance across international, national, organizational, and individual governance layers. This dossier integrates the structural explanation of G-OS with a consolidated feature overview, providing a complete and audit-ready description of the system for researchers, policymakers, and international institutions.

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1 Executive Summary

Fundamental Principle (Non-Negotiable) The command authority must always remain human. The system's role is to generate complete and transparent information for human decision-making. As long as this separation is preserved, governance cannot drift, escalate, or collapse — even if AI surpasses human intelligence.

Unified Causal Line Value → Back → Gate → Front

G-OS / PEACE-MAKER is a governance operating system designed to ensure drift-free, stable, and institution-compatible AI behavior by externalizing all normative content into a fixed Value Layer and enforcing a single Integration Gate for all updates.

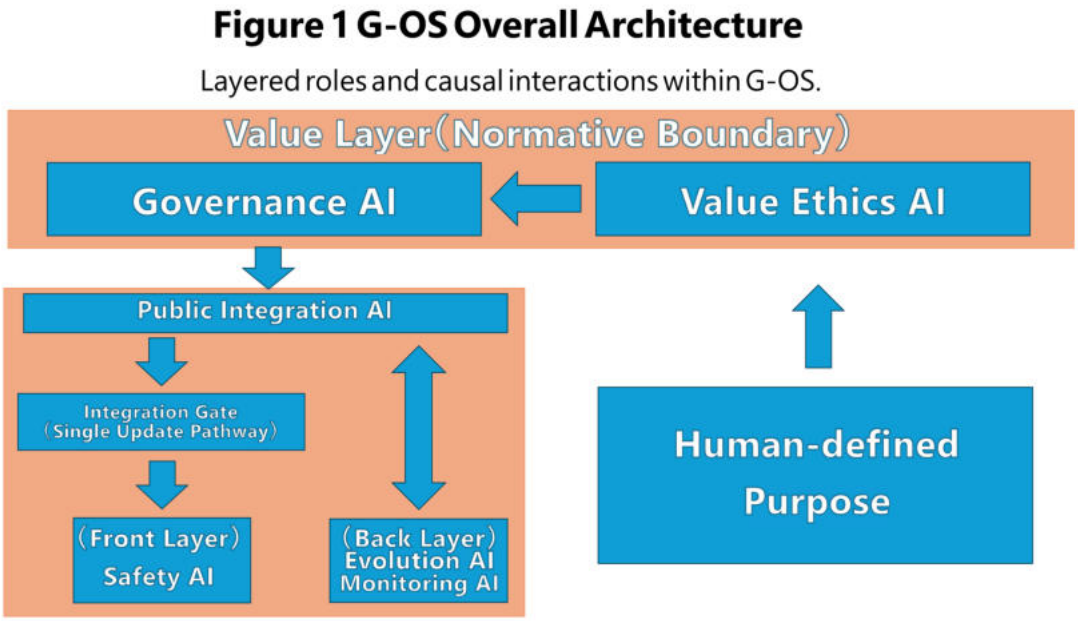


Figure 1: G-OS Architecture: Value → Back → Gate → Front

This dossier integrates the causal architecture with a consolidated structural summary (Features Overview), forming a complete and audit-ready representation of G-OS.

2 Background and Purpose

Modern AI systems lack a structural mechanism that guarantees long-term normative stability. G-OS addresses this gap by externalizing all normative content into a fixed Value Layer and enforcing a single Integration Gate.

3 Causal Architecture

The causal architecture of G-OS / PEACE-MAKER is defined by a single, unified causal line:

$$\text{Value} \rightarrow \text{Back} \rightarrow \text{Gate} \rightarrow \text{Front}$$

This structure ensures that all governance behavior is derived from an externally fixed Value Layer.

4 Value Layer Construction

The Value Layer is the externally fixed normative anchor of G-OS.

Construction follows three steps:

1. Extraction of Normative Intent
2. Structural Encoding
3. External Fixation

5 Value Layer Inheritance

Inheritance is scale-free across international, national, organizational, and individual layers.

6 Integration Gate

The Integration Gate is the single point of judgment.

Gate enforces:

1. Single-Point Evaluation
2. Normative Consistency Checking
3. Immutable Causal Direction

7 Back Layer

The Back Layer performs exhaustive exploration without normative intent.

8 Front Layer

The Front Layer expresses only Gate-approved outputs.

9 LLM Translation Layer

The LLM Translation Layer sits outside the causal chain.

10 International Alignment

G-OS aligns structurally with major international governance frameworks.

11 Use Cases

Applications include:

1. Public-Sector AI Governance
2. Corporate AI Risk Management
3. Cross-Border AI Operations
4. Domain-Specific Governance Modules
5. Long-Term Stability and Drift Prevention

12 Temporal Convergence

Temporal convergence emerges from:

1. Gate-Driven Stability Over Time
2. Monotonic Reduction of Drift
3. Asymptotic Behavioral Convergence

13 Features Overview — Structural Summary of G-OS / PEACEMAKER

This chapter consolidates all structural features into a single meta-level external fixed point (meta-Value Layer).

13.1 Meta-Structure

- Scale-Free Structure
- External Fixed Point
- Backward Causality
- Single Update Pathway
- Uncertainty Externalization

13.2 Causal Architecture

$$\text{Value} \rightarrow \text{Back} \rightarrow \text{Gate} \rightarrow \text{Front}$$

13.3 Value Layer

Immutable snapshot; fractal inheritance; drift-free anchor.

13.4 Drift-Free

Value externalization + single Gate + Back isolation.

13.5 Back Layer

Exploration-only; proposal-only; no direct output.

13.6 Gate Layer

Single evaluator; full auditability; natural alignment with EU/ISO/NIST.

13.7 Front Layer

Predictable; auditable; institution-compatible.

Exponential Evolution Principle G-OS accelerates societal and institutional evolution not by altering existing governance structures, but by enabling an exponential increase in the speed and breadth of safe exploration. The Back Layer performs unrestricted, non-normative exploration, while the Integration Gate ensures that only outputs aligned with the externally fixed Value Layer are adopted. This architecture allows AI systems to evolve at exponential speed while always producing results that remain compatible with the norms, laws, and expectations of the society of their time.

13.8 Temporal Convergence

Stability increases over time.

13.9 Model-Free / Hardware-Agnostic

Applies to any model, any hardware.

13.10 International Alignment

Natural structural consistency with OECD, EU AI Act, ISO/IEC 42001, UN/ITU.

13.11 Use-Case Scalability

Administrative, corporate, supply-chain, high-risk AI, international cooperation.

Social Implication By preserving human judgment as the sole decision-making authority and positioning AI as an exploratory amplifier rather than a substitute, G-OS / PEACE-MAKER provides a structurally stable foundation for societal trust. The system prevents large-scale labor displacement, maintains institutional accountability, and ensures that technological acceleration does not translate into social disruption. As a result, G-OS supports a transition to high-productivity AI-enabled governance while safeguarding social stability, economic continuity, and public confidence in the long-term evolution of AI systems.

14 Conclusion

G-OS / PEACE-MAKER provides a drift-free, stable, and institution-compatible governance OS.

Macroeconomic Implication The causal architecture of G-OS / PEACE-MAKER (Value $\rightarrow$ Back $\rightarrow$ Gate $\rightarrow$ Front) fixes the responsibility boundary on the human side while exponentially expanding exploratory capacity through the Back Layer. Because judgment remains exclusively human at the Gate, the demand for white-collar labor is structurally preserved. As a result, per-worker productivity increases without reducing labor input. In macroeconomic terms, when employment remains stable and productivity rises, aggregate output (GDP) increases accordingly. Thus, G-OS functions not as a system that substitutes human labor, but as an institutional mechanism that amplifies human decision-making capacity, enabling simultaneous employment preservation and economic growth.

Connection to Appendix The appendix presents the biological and philosophical foundations (external DNA, immune filtering, fractal ecosystems) that naturally converge with the G-OS architecture.

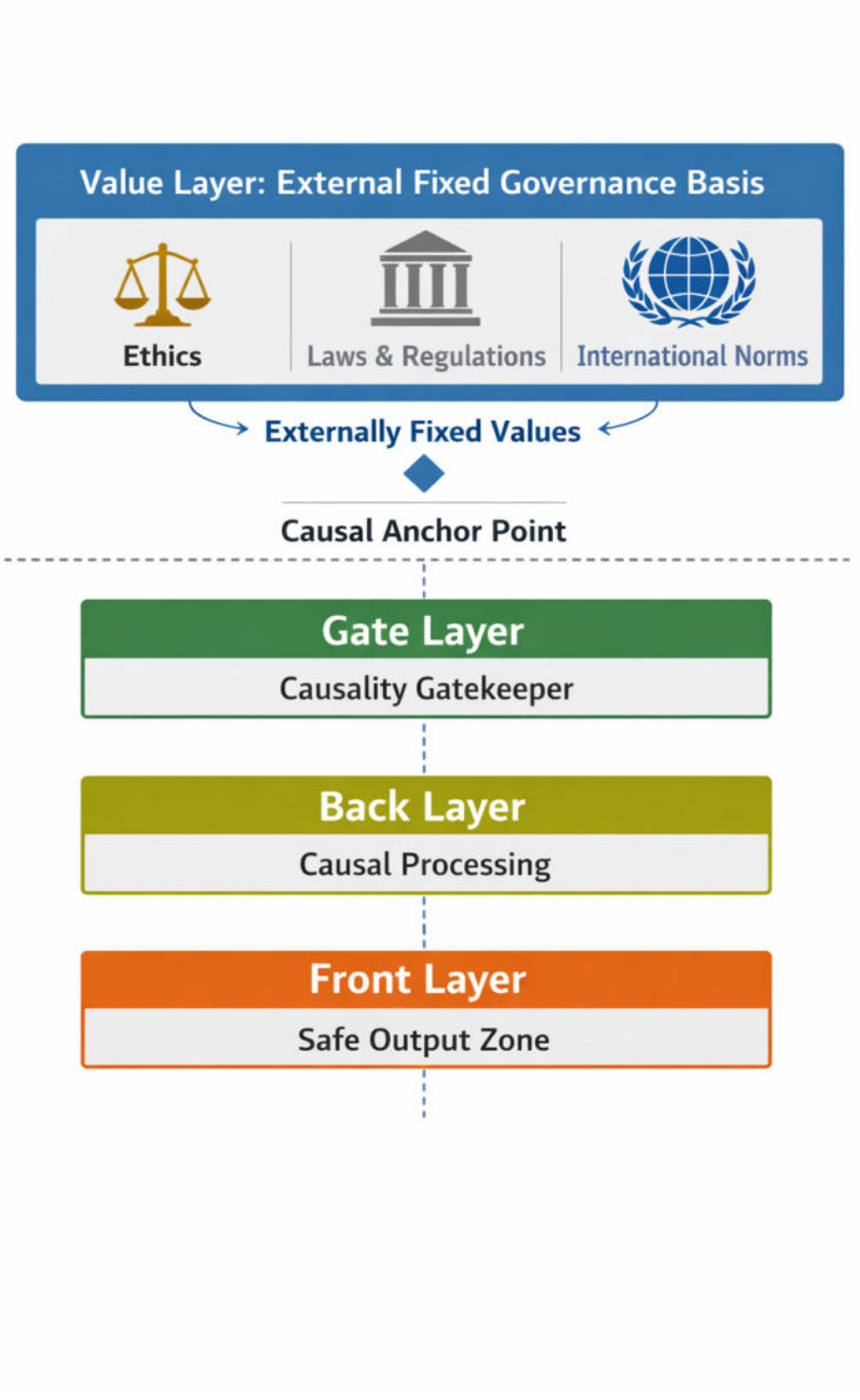


Figure 2: Value Layer: External Normative Anchor

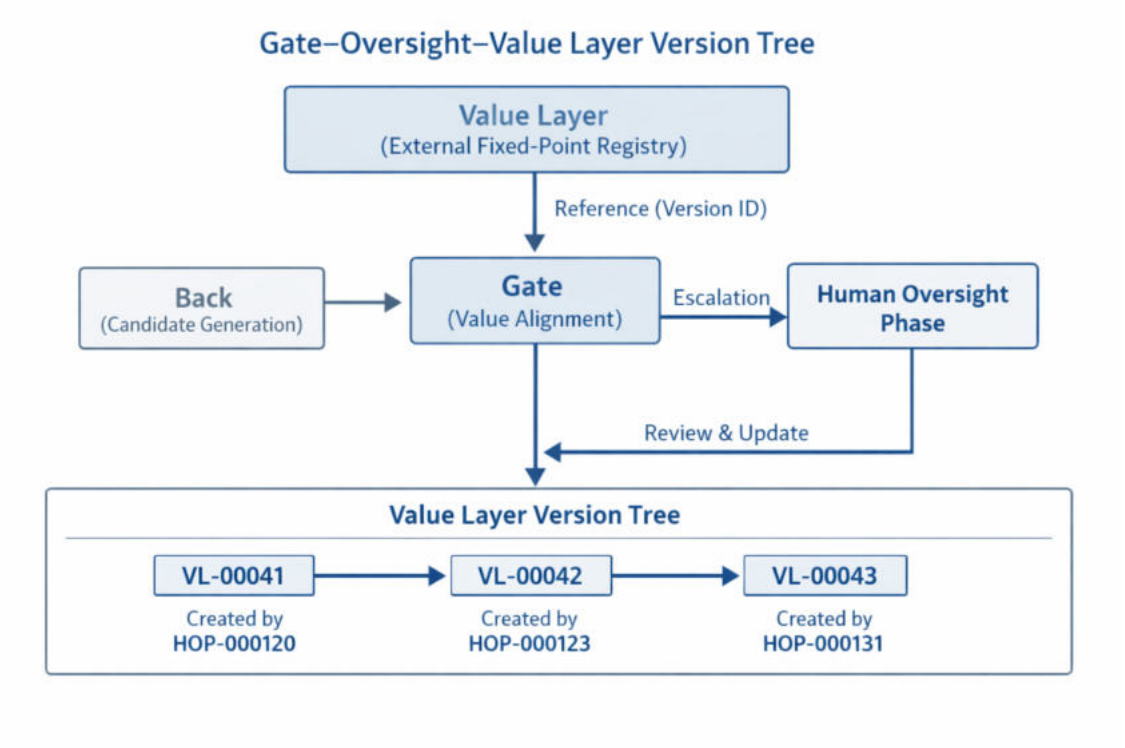


Figure 3: Integration Gate and Oversight Structure

PEACE-MAKER – Alignment with International AI Governance Frameworks

PEACE-MAKER Structural Element	OECD AI Principles	EU AI Act	ISO/IEC 42001	UN/ITU AI Governance
Value Layer (Externally Fixed Purpose)	Human-Centricity / Accountability	Fundamental Rights Protection	Clause 4 – Context & Leadership	Human-Rights-Based AI
Unknown = Unknown (Uncertainty Externalization)	Transparency / Risk Awareness	Article 9 – Risk Management	Clause 8.3 – Risk Controls	Transparency & Explainability
Integration Gate (Single Update Pathway)	Traceability / Safety	Article 12 – Logging & Record-Keeping	Clause 8.2 – Operational Control	Auditability & Oversight
Front/Back Layer Separation	Robustness / Safety	Article 14 – Human Oversight	Clause 8.4 – Monitoring & Review	Safe Deployment Principles
Model-Free / Hardware-Agnostic Architecture	Future-Proof Governance	General-Purpose AI Requirements	Clause 4 – Scope Independence	Technology-Neutral Governance
Temporal Convergence (Long-Term Stability)	Long-Term Trustworthiness	Article 15 – Technical Safety	Clause 9 – Continual Improvement	Sustainable AI Governance

Note:
The alignment shown in this table was not intentionally designed to match these international AI governance frameworks. PEACE-MAKER was developed independently, without referencing OECD, EU AI Act, ISO/IEC 42001, or UN/ITU documents.

Interestingly, the resulting structure naturally satisfies the core requirements of all major global AI governance frameworks. Whether this convergence is a coincidence or a structural inevitability is unclear even to me.

I suspect that my 20 years of experience in Japan's trust-bank system development — which emphasizes externally fixed purpose, single update pathways, strict separation of testing and production, non-speculative handling of unknowns, and long-term operational stability — may have shaped the Value Layer of PEACE-MAKER in a way that naturally aligns with global governance principles.

Figure 4: Alignment with OECD, EU AI Act, ISO/IEC 42001, UN Frameworks

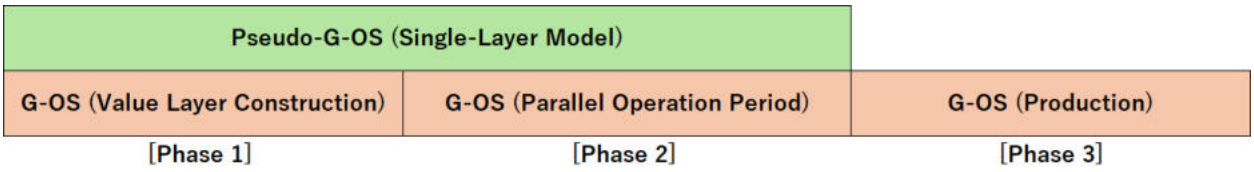


Figure 5: Temporal Convergence and G-OS Production Phases

Bio-Inspired Model: Appendix to G-OS/PEACE-MAKER

Yasuhiro Azuma

June 2026

Abstract

This appendix presents a bio-inspired world-building perspective behind G-OS/PEACE-MAKER. When the governance stabilization problem is decomposed into its pure structural form, causal patterns identical to those of biological evolution emerge naturally. This document interprets the core causal line

Value → Back → Gate → Front

as a living, evolution-capable yet drift-free governance architecture, and positions it as a Japan-origin, safety-first, bio-inspired governance OS for international institutions.

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1 Act 0: Opening Narration

The biological behaviors presented in this appendix were not intentionally designed.

When the governance stabilization problem was decomposed into its pure structural form, causal patterns identical to those of biological evolution emerged naturally.

This appendix presents this "unintended structural convergence" as a world-building perspective behind G-OS/PEACE-MAKER.

2 Act 1: The Hidden Layer of the World Quietly Emerges

The external Value Layer of governance functions in the same way that DNA functions in living systems.

It cannot be rewritten from within, and it serves as the origin point for all downstream behaviors.

This structure will later be formalized as **External Value DNA**, but here it appears simply as a principle quietly operating beneath the visible world.

The exploration performed by AI resembles biological variation and trial-and-error, moving through a vast possibility space while remaining anchored to the external Value Layer.

At this stage, nothing is yet expressed into the world. The surface remains silent, but beneath it, a "living OS" has already begun to move.

3 Act 2: The OS Reveals Itself as a Living System

Among the countless possibilities generated by the Back Layer, some represent dangerous mutations. These are filtered out by the Gate.

The Gate functions like an immune checkpoint, blocking harmful variations and allowing only safe evolutionary paths to pass.

This structure is formalized as **Immune-Based Safety Gate**.

Through this mechanism, G-OS achieves **Evolution Without Drift**— evolution without uncontrolled deviation.

The exploration of the Back Layer is filtered by the Gate and expressed through the Front Layer as a phenotype in the real world.

This causal chain mirrors that of biological life:

DNA → Variation → Immune Filtering → Phenotype

Here, **Bio-Inspired Governance Architecture** emerges as the structural identity of G-OS/PEACE-MAKER.

4 Act 3: A Vision of the Earth Becoming Cellular

Governance operates through hierarchical layers:

International → National → Ministries → Organizations → Individuals

This mirrors the hierarchical structure of life:

Ecosystems → Species → Organisms → Organs → Cells

The same fractal logic applies.

This structure forms a **Fractal Governance Ecosystem**, a planetary-scale "living OS."

This OS evolves like a biological system while maintaining safety through its external value anchor.

Such a dual structure—evolutionary yet non-drifting, adaptive yet value-aligned—is rare globally and culturally coherent with Japan's safety-first design philosophy.

Thus, it is presented as a **Japan-Origin Safety OS**, or **Japan's Safety-First AI OS**, offered to the international community as a bio-inspired governance operating system.

5 Act 4: Quiet Afterimage and Bridge to the Main Document

The biological model presented in this appendix constitutes the world-building layer of G-OS/PEACE-MAKER and provides the conceptual background for understanding the structure of the main dossier.

The biological behaviors described here were not engineered, but emerged naturally from pursuing the governance stabilization problem to its structural core.

The main document connects this model to administrative practice and international standardization, presenting it as an implementable governance OS.

Together, the main dossier and this appendix close the full picture of G-OS/PEACE-MAKER as both a structurally valid governance architecture and a bio-inspired, evolution-capable, drift-free "living OS."