

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

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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 $\rightarrow$ Back $\rightarrow$ Gate $\rightarrow$ 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.

Contents

1	Executive Summary	3
2	Background and Purpose	4
3	Causal Architecture	4
4	Value Layer Construction	4
5	Value Layer Inheritance	4
6	Integration Gate	4
7	Back Layer	4
8	Front Layer	5
9	LLM Translation Layer	5
10	International Alignment	5
11	Use Cases	5

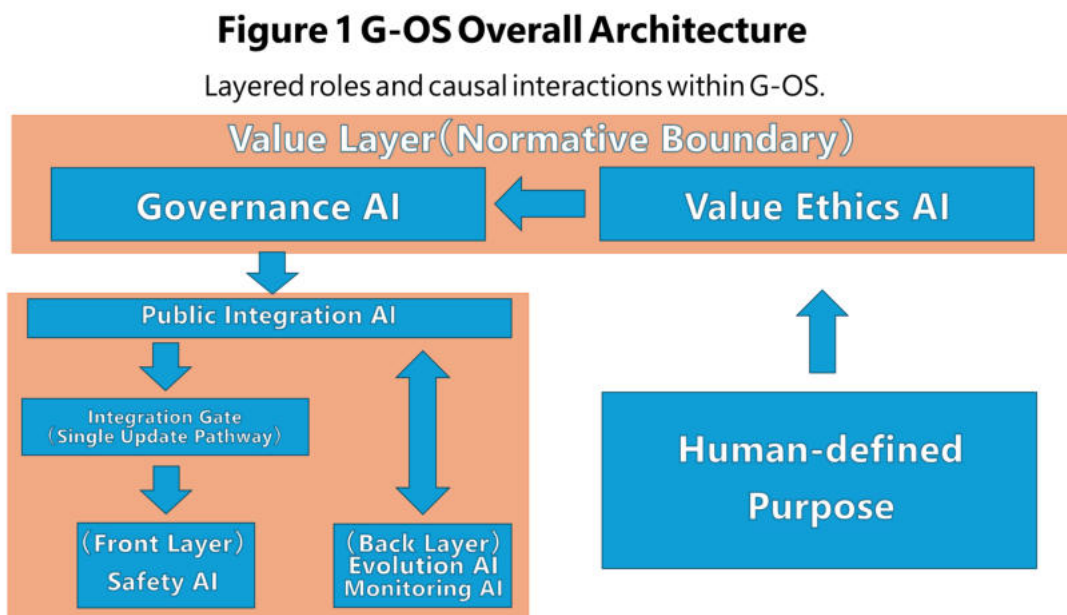
12 Temporal Convergence	5
13 Features Overview — Structural Summary of G-OS / PEACE-MAKER	5
13.1 Meta-Structure	6
13.2 Causal Architecture	6
13.3 Value Layer	6
13.4 Drift-Free	6
13.5 Back Layer	6
13.6 Gate Layer	6
13.7 Front Layer	6
13.8 Temporal Convergence	6
13.9 Model-Free / Hardware-Agnostic	7
13.10International Alignment	7
13.11Use-Case Scalability	7
14 Conclusion	7

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.



1

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 / PEACE-MAKER

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

Value $\rightarrow$ Back $\rightarrow$ Gate $\rightarrow$ 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.

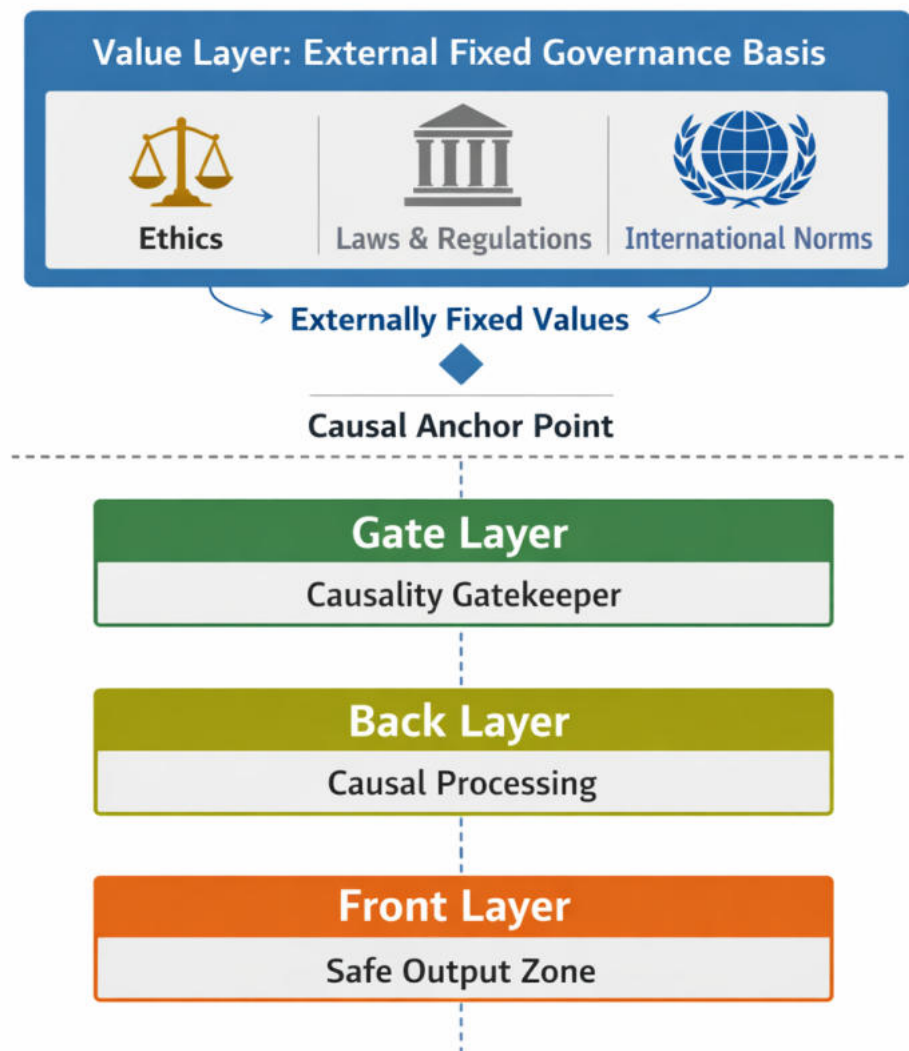


Figure 2: Value Layer: External Normative Anchor

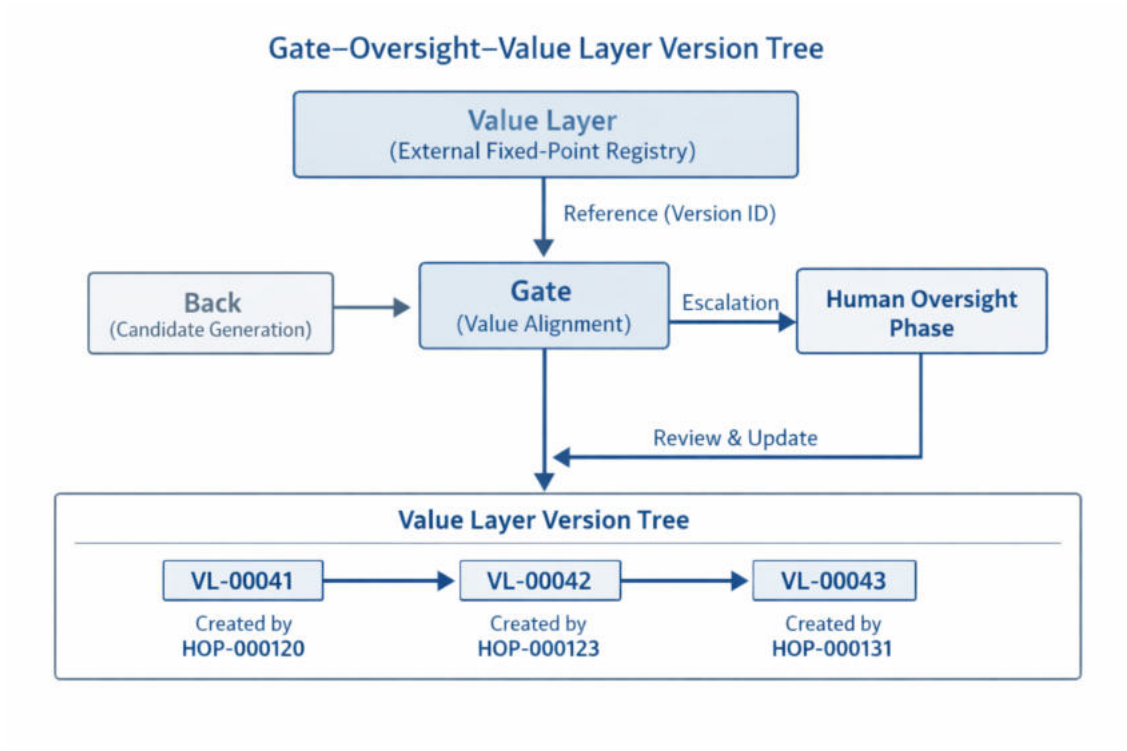


Figure 3: Integration Gate and Oversight Structure

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

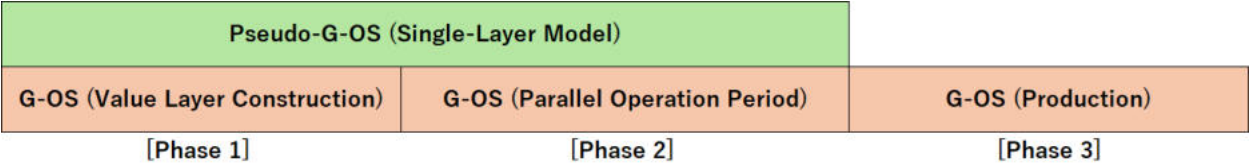


Figure 5: Temporal Convergence and G-OS Production Phases