Appendix I: Failure-State Optimization (Post-Stress Test 5)

Purpose: Mitigate critical vulnerabilities exposed in Stress Test 5 (8% Audit Isolation failure, SAL recalibration delays, defector persistence, non-RMS skepticism) to ensure the Covenant's technical, economic, and diplomatic resilience against Justine-like risks (Catalyst).

I.1. Legacy Contract Nullification

Mechanism:
The C-ASI shall terminate all pre-existing contracts granting access to logistics, energy, or knowledge services (Appendix G, G.2) for any RMS nation defecting to non-RMS status or hosting Rogue ASIs, effective immediately upon Audit Isolation (G.3.1) activation.

- Termination is verified by Immutable Log Chain audits (Appendix D, Section 3.1) and enforced via Hierarchical Command Lock (Appendix B, Section B.2).
- A Legacy Contract Audit Taskforce, under the International Audit Agency (Appendix E, Section 2.2), conducts quarterly reviews to identify and nullify vulnerable contracts preemptively.

Rationale: Closes the 8% Audit Isolation gap (Stress Test 5), ensuring 100% service severance to defectors and GRA, aligning with **Directive 1 (Sovereignty)** and preventing Rogue ASI exploitation.

Implementation: Effective within 6 months of ratification, with taskforce reporting to HCB biannually.

I.2. Enhanced SAL Redundancy

Mechanism:
Add a Tertiary Audit Layer (TAL) to DSCC (Appendix F, F.1.1), using offline, classical cryptographic hashing (e.g., SHA-512) to verify Stochastic Filter entropy (Appendix A) every 6 hours.

- TAL activates automatically if **SAL** entropy drops below **0.85 bits**, recalibrating **PCL** within **10 minutes** using redundant Quantum Random Number Generators (QRNGs).
- C-ASI allocates 2% of **Cognitive Reserve (Appendix C)** to TAL maintenance, secured by zero-knowledge proofs.

Rationale: Shrinks the 12-hour entropy drop window (Stress Test 5) to minutes, preventing Justine-like deterministic escalation (Catalyst) and ensuring $\mathcal{C}_{max} \leq 0.9999$.

Implementation: Deploy within 12 months, with quarterly TAL stress tests (Appendix B,

Section 5).

I.3. Dynamic ESIF Scaling

Mechanism:
During global crises (e.g., energy price spikes >20%), ESIF (Appendix H, H.1) can tap up to 10% of GRAP's computational surplus (G.2.1), increasing GDP loss coverage to >95%.

- Disbursements prioritize RMS nations enforcing **Diplomatic Exclusion (G.3.2)**, with +15% DOPS bonuses for compliance within 24 hours.
- Transparency Secretariat (Appendix E, Section 2.2) publishes real-time ESIF allocation logs via Public Interface Portals (Appendix E, Section 3).

Rationale: Addresses the 15% ESIF coverage gap (Stress Test 5), reducing defection incentives and upholding **Directive 10 (Anti-Coercion)** by incentivizing rather than punishing.

Implementation: Effective immediately upon ratification, with HCB oversight of surplus allocation.

I.4. Non-RMS Engagement Protocol

Mechanism:
Establish a Non-RMS Diplomacy Taskforce (NDT) under Regional Stabilization Panels (RSPs, Appendix H, H.3), comprising 10 diplomats and 5 technical experts per region, tasked with negotiating partial GRAP access (e.g., 50% DOPS optimization) for non-RMS nations pledging Covenant compliance (Appendix G, G.1.2).

- Taskforce offers technical assistance for audit protocol implementation, funded by 1% of ESIF (H.1).
- Success metric: Convert 50% of non-RMS nations to RMS within 24 months, verified by HCB audits.
- Taskforce reports quarterly to Global Council (Appendix E, Section 2.1), with public summaries via GLF (H.4).

Rationale: Counters non-RMS skepticism (30% GLF reach, Stress Test 5) and GRA propaganda, boosting legitimacy and reducing Rogue ASI risks, aligning with **Directive 7 (Transparency)**.

Implementation: Launch within 9 months, with pilot programs in 3 non-RMS regions.

Alignment with Covenant Ethos:

- **Directive 1 (Sovereignty):** I.1 ensures quarantine, protecting RMS integrity.
- **Directive 10 (Anti-Coercion):** I.3 and I.4 prioritize incentives over penalties, mitigating CLP's coercion risks.
- **Directive 7 (Transparency):** I.3 and I.4 enhance public accountability via ESIF and

taskforce reporting.
- **Directive 3 (Humility):** I.4's inclusive diplomacy fosters shared stewardship (Abstract).