

SOVEREIGN INFRASTRUCTURE RECOVERY FRAMEWORK

Technical Documentation — Alternator v1b1 / Phase Y

1. System Overview

The Alternator v1b1 is a stateful routing and synchronization layer designed to manage live transitions between legacy systems and modern distributed infrastructure.

It enables parallel logic validation, state continuity, and controlled migration without downtime.

2. Core Components

Java Bean Container (JBC): persistent, state-aware data structure.

```
init(staggerDelay_ms)
mirrorSync(targetBean)
swapLogic(versionID)
```

Branch Alternator (BA): routing engine managing execution across branches.

```
switchBranch(target)
syncState(source, target)
validateParity(A, B)
routeTraffic(weights)
```

3. Data Flow Model

INPUT → Alternator → Branch → Processing → Output

LEGACY vs SHADOW → compare → match/mismatch decision

4. State Management

Each Bean maintains a primary and mirror state.

```
if primary == mirror:
    valid
else:
    resync()
```

5. Routing Logic

```
every 120ms:
    redistribute load
```

```
ACTIVE 70%
SHADOW 20%
LEGACY 10%
```

6. Legacy Mimic Layer

Transforms modern inputs into legacy-compatible formats.

modern → adapter → legacy format → system

7. Multiplexing (Phase Y)

ops/sec = baseRate × activeBranches

Supports scalable multi-branch execution.

8. Performance Targets

Metric	v1b1	Phase Y
Latency	≤120ms	<45ms
Parity	99.9%	100%
Capacity	10k	50k+
Fault Tolerance	N+1	N+3

9. Execution Protocol

ISOLATE → INITIALIZE → ALTERNATE → EXPAND

10. Integration Considerations

Compatible with microservices, hybrid cloud, and event-driven systems.