NOVAK PROTOCOL LAWS

Law L8: Temporal Ordering

Global Monotonic Consistency

Authoritative Edition

L8 Definition

"Time is not a local clock. It is a global, monotonic, cryptographically bound sequence."

Events MUST occur in order.

The Time Equation

Time is a hash, not just a number.

```
T = H( UTC || Sequence || Device_Drift )
```

Ensures strict linear progression.

Monotonicity

Time only moves forward. It can never loop back.

Attempting to use T-1 results in immediate block.

PL-X Integration

Hardware Clocks

L8 mandates the use of high-precision hardware counters (TSC/HPET) to prevent software spoofing.

Drift Detection

If local time drifts beyond the allowed window (e.g., >50ms), the Safety Gate locks execution.

Preventing Time Attacks

Replay Attack

Using an old valid token.

BLOCKED

Backdating

Faking a past event.

BLOCKED

Future-Dating

Predicting future state.

BLOCKED

Cryptographic Binding

The timestamp **T** is embedded inside the HVET.

```
HVET = Hash( ... || T )
```

This means:

- You cannot change the time without breaking the hash.
- You cannot change the data without breaking the time link.

Global Consistency

Trusted Nodes (TTAN)

Trusted Time Attestation Nodes provide the heartbeat.

Cross-Verification

Systems verify each other's time delta. Large skews trigger a freeze.

Summary

Temporal Ordering

The Arrow of Time

L8 ensures that history is linear, monotonic, and irreversible. It is the heartbeat of the NOVAK protocol.

Questions?

NOVAK Protocol Standards Series

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