

# JACOS Whitepaper

## The Algorithmic Auditor for Urban Governance

### 1. Executive Summary

JACOS (Justice through Accuracy Core Operating System) operates as the world's first decentralized performance auditor for the public sector. Instead of proposing policy, JACOS provides a mathematical validation layer—the G-Score—to audit administrative efficiency. By isolating local governance results from global and regional trends, we offer a "Truth Machine" that validates effective management and ensures accountability through data integrity.

### 2. The Auditing Problem

Modern governance suffers from a "verification gap." Public trust is eroded because achievements are often reported through subjective PR lenses rather than objective data. Existing auditing processes are often slow, retrospective, and susceptible to local political influence. JACOS solves this by providing real-time, immutable, and context-aware performance auditing.

### 3. The Auditing Framework (G-Score)

The G-Score acts as a multi-dimensional audit, filtering out external "noise" to reveal the true signal of administrative impact.

#### A. Baseline & Volatility Audit

Before assessing current performance, the system audits a 10-year historical baseline to understand the country's trajectory. To ensure fairness, we calculate the Standard Deviation ( $\sigma$ ) to account for historical volatility.

Audit Formula:

$$\text{StandardDeviation} = \text{SQRT}(\text{SUM}((\text{Year} - \text{AverageYears})^2) / \text{NumberOfYears})$$

This ensures that leaders in high-volatility environments are audited against a calibrated scale.

#### B. Regional Context Adjustment

A core function of the JACOS audit is to subtract "free growth" caused by regional or global trends. A leader's score is only validated if their progress exceeds the performance of a 10-country regional peer group.

Category Audit Formula:

$$\text{CategoryScore} = \left( (\text{CurrentYear} - \text{AverageYears}) - (\text{RegionalCurrentYear} - \text{RegionalAverageYears}) \right) / \text{StandardDeviation}$$

### C. Final Performance Validation

The Final G-Score represents the weighted average of audited categories. The auditing process enforces a Min-Weight Limit ( $\$1/2n\$$ ) to ensure that no critical sector—such as healthcare or transparency—is omitted from the final evaluation.

Final Score Formula:

$$\text{Score} = \text{SUM} (\text{CategoryScore} * \text{CategoryWeight} ) / \text{NumberOfCategories}$$

## 4. Technological Trust Layer

**Immutable Ledger:** All audited scores are recorded on Ethereum Layer 2 (L2). Once a performance audit is finalized, the record is permanent and tamper-proof.

**Multi-Source Data Integrity:** JACOS audits data from international independent entities (e.g., World Bank, IMF, Eurostat) to prevent the use of manipulated national statistics.

**Quadratic Priority Weighting:** The audit accounts for citizen priorities by weighting categories based on verified public needs (e.g., WVS data), ensuring the audit reflects human-centric outcomes.

## 5. Vision: The Future of Accountability

By 2030, JACOS aims to be the standard auditing layer for international cooperation. We envision a world where administrative competence is a verified asset, allowing high-performing managers to unlock investments and trust through the power of accurate, algorithmic auditing.

**JACOS: Validating Merit, Ensuring Justice.**