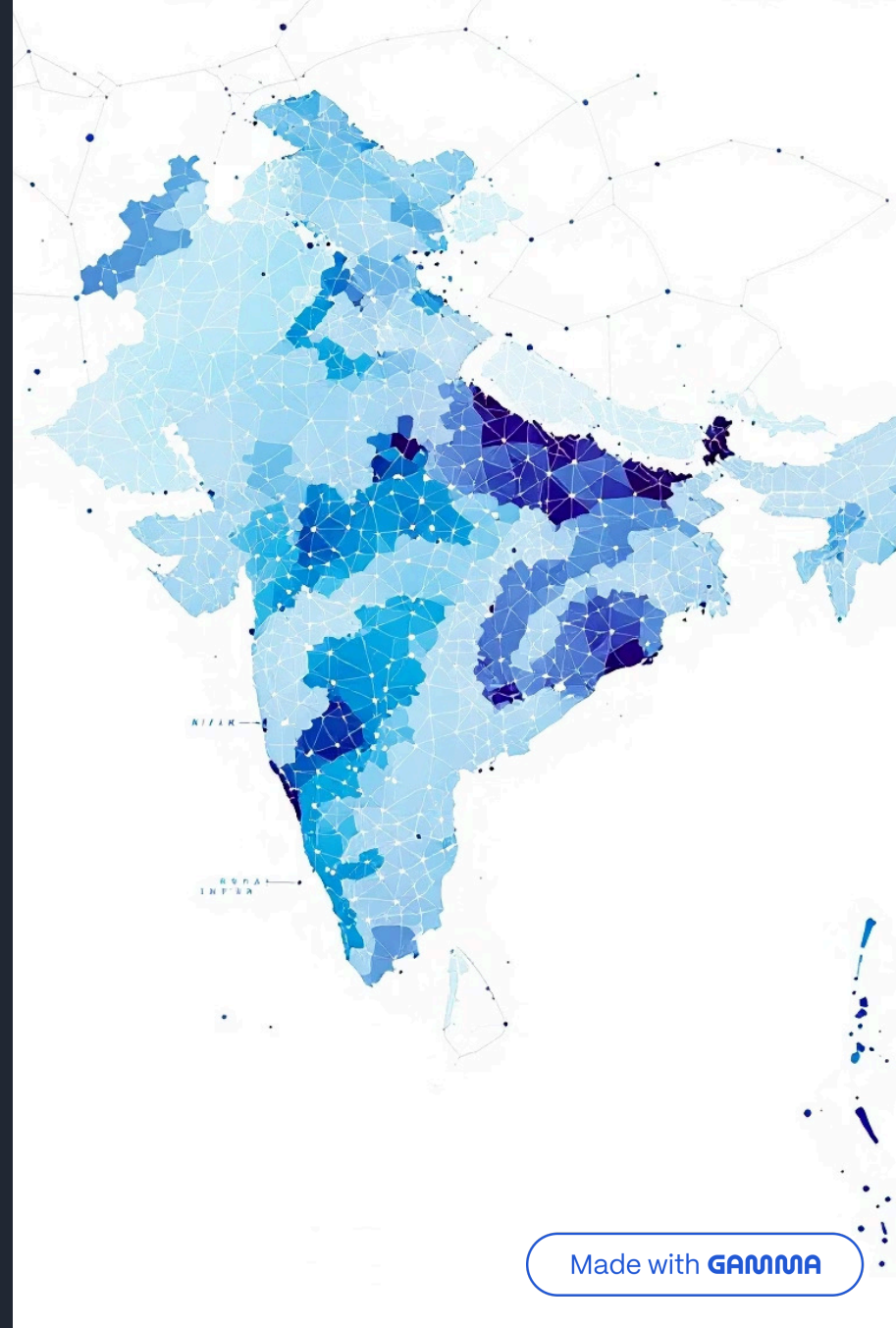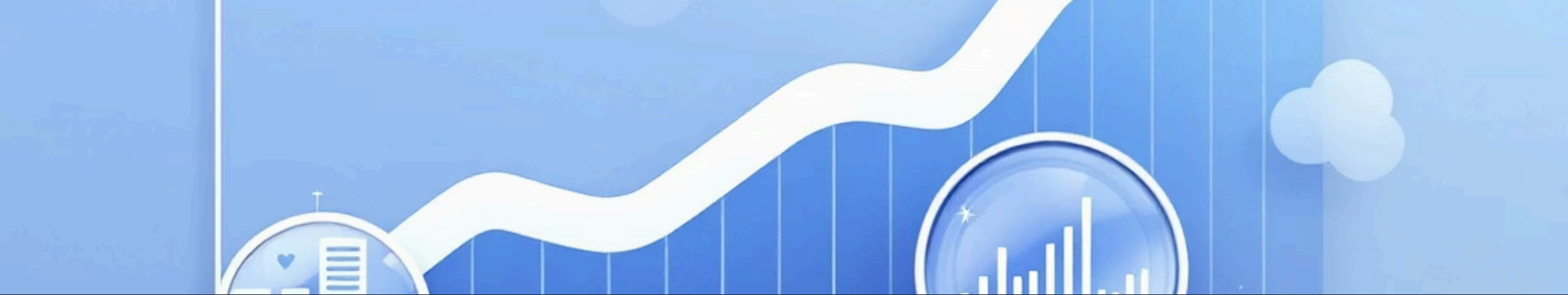# Aadhaar Sentinel: Intelligence-Driven Capacity Planning & Integrity Review

A geospatial risk engine for the 2026 MBU Campaign & Database Cleanup

Team Sentinel | UIDAI Hackathon 2026

Why UIDAI Needs Intelligence-Driven Prioritization

1

Scaling Authentication

UIDAI processes 221 crore authentications monthly, experiencing a 10% year-over-year growth.

2

Mission Critical Initiative

Update biometrics for 6 crore children by September 2026, a critical national endeavor.

3

Systemic Risks Identified

- Capacity: Can existing infrastructure manage the MBU surge?
- Integrity: How to detect silent demographic manipulation at scale?

4

Addressing the Gap

Current audits, reliant on complaint volume, may miss subtle operational irregularities and systemic bottlenecks.

From Volume-Based Audits to Intelligence-Led Surveillance

Aadhaar Sentinel provides a pincode-level analytics engine, meticulously processing 4.9 million records to identify actionable insights.

Measuring Pressure

Beyond mere transaction counts, we quantify operational pressure.

Identifying Imbalance

Detecting discrepancies in activity levels across regions.

Uncovering Anomalies

Pinpointing statistical irregularities in update patterns.

Capacity Engine

Detects potential operational bottlenecks and assesses MBU readiness.

Integrity Engine

Identifies suspicious update patterns for database cleanup initiatives.

Three Signals That Tell the Full Story

Our methodology utilizes three key metrics for a comprehensive understanding of operational dynamics and integrity risks.

Total Activity Index (TAI)

Measures raw operational load, encompassing enrolments, demographic, and biometric updates.
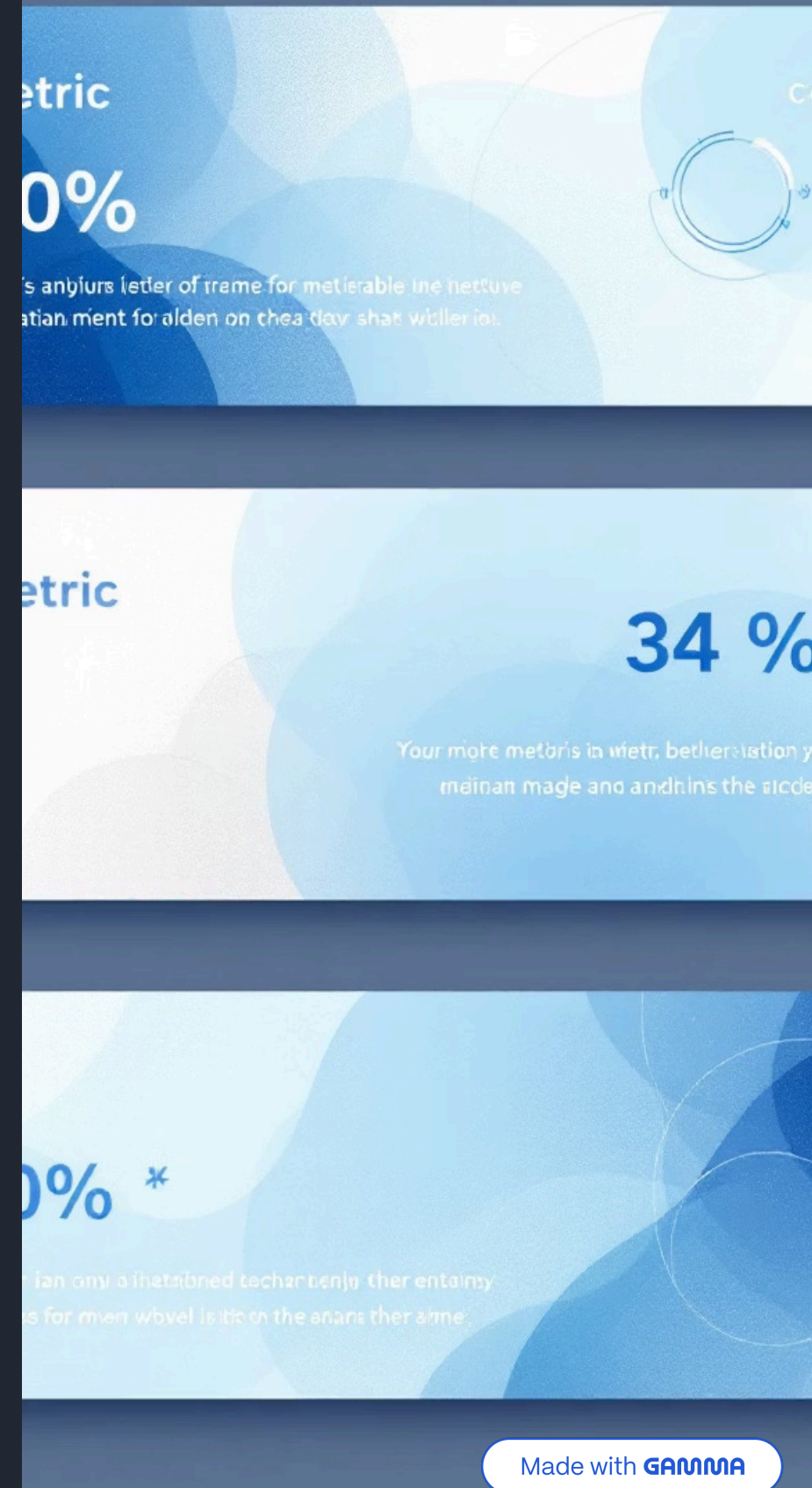
Population-Normalized Activity (PNA)

Activity / Estimated Population. Identifies centers overwhelmed for their size and surfaces potential "ghost villages" or "crush zones."

Demographic Pressure Ratio (DPR)

Demographic Updates / (Biometric Updates + 1). A DPR value greater than 10 indicates a strong integrity risk signal, potentially due to biometric bypass or demographic misuse.

Scanning the Entire Country for Risk

Aadhaar Sentinel analyzes 32,898 pincodes, identifying critical areas that require focused attention.

- 1,317 outlier pincodes flagged, representing the top 2% by risk.

- Risk distribution is not uniform across the nation.

Border Corridors

Emerging as areas with elevated integrity risk signals.

Metro Hubs

Demonstrating a dual risk profile of both capacity and integrity challenges.

Made with GAMMA

The Risks That Volume-Based Audits Miss

Aadhaar Sentinel shifts focus from mere volume to strategic severity, revealing critical areas often overlooked by traditional methods.

Strategic Shift:

- From "Top 10 by Volume" to "Top 20 by Severity."
- West Delhi emerges as a primary target with a severity score of 324.5.

Why West Delhi Ranks First:

- 6x population-normalized activity.
- 12x demographic anomaly ratio.

The Critical Threats: Insights from Sentinel

1

The Dual-Crisis (West Delhi)

Extreme overcrowding in this area is masking irregular demographic updates.

- PNA: 6.10
- DPR: 12.23

Action: Deploy flying squads to pincode 110059 for immediate review.

2

The Silent Anomaly (Ahilyanagar)

This location shows a low volume but an extremely high integrity signal.

- PNA: 0.006
- DPR: 193.0

Action: Suspend operator credentials in this pincode pending a comprehensive digital audit.

Optimizing Resources & Strengthening Border Security

FINDING 3

Capacity Collapse (Moradabad)

This region experiences severe operational overload, primarily due to capacity constraints, not integrity issues.

- PNA: 6.31
- DPR: 1.26

Action: Reallocate 20 dormant kits to this pincode to enhance MBU readiness.
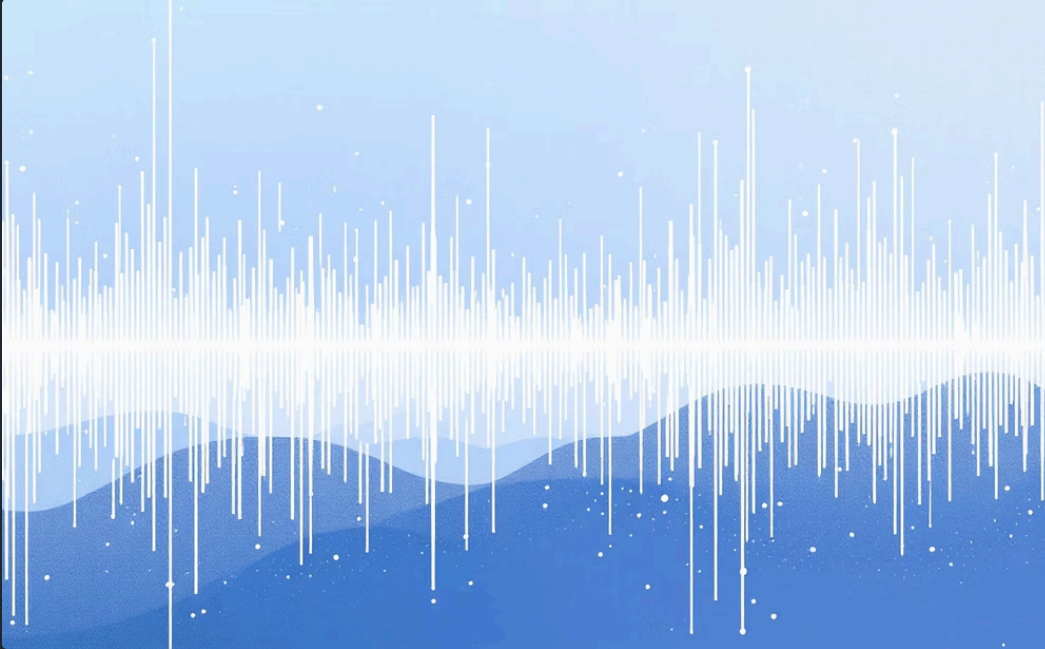
FINDING 4

Border Sensitivity (Sribhumi / Koch Bihar)

Abnormally high demographic churn is observed in these critical border zones.

- DPR: 77.0

Action: Mandate Level-2 state approval for all address changes in these sensitive areas.

Why Severity Scoring Wins

The Old Way: Volume-Based Audits

- Flags locations like Pune due to high complaint volume.
- Often misses subtle statistical anomalies.

The Sentinel Way: Severity Scoring

- Flags critical areas such as West Delhi and Ahilyanagar.
- Catches 12x higher anomaly ratios and 6x capacity overloads.

Impact:

- Optimizes audit resources for maximum effectiveness.
- Ensures focus on critical severity, not merely data volume.

Made with GAMMA

Aadhaar Sentinel Is Ready for Deployment

Aadhaar Sentinel offers ready-to-deploy intelligence to fortify the 2026 MBU campaign and enhance database integrity.

01

Privacy-Preserving

Utilizes pincode-level analytics while ensuring data privacy.

02

Modular Codebase

Designed for flexibility and easy integration into existing systems.

Next Steps:

- Pilot severity scoring in 5 states to validate effectiveness.
- Integrate face authentication failure data for enhanced detection.
- Add real-time API feeds for continuous monitoring and rapid response.

Aadhaar Sentinel: Securing the foundation of Digital India.