CALI AI

CALI FISCAL GRID -AI MODEL

Government Note on Sub-Models, Functions and Revenue Utility

Powered by CALI Mother Platform, CLA Atomic Intelligence and Agentic AI Systems

Central proposition

CALI Fiscal Grid is not a collection of disconnected tools. It is one AI-native fiscal intelligence model for land revenues. Its sub-models operate as modules on a common CLA atomic data layer so that discovery, valuation, assessment, billing, collection, recovery, audit and enforcement work from the same parcel-building-unit truth.

1. Executive Summary

The CALI Fiscal Grid AI Model is proposed as a government-facing revenue maximisation platform for land, property and related fiscal instruments. It converts every parcel, building and unit into a Cognitive Land Atom (CLA), assigns a CALI PIN, links the atom to legal, spatial, fiscal, valuation, infrastructure and compliance attributes, and then uses AI agents to discover revenue gaps, optimise valuations, strengthen assessment rolls, improve collections and reduce leakage.

For government departments, this means that property tax, land revenue, stamp duty, registration, mutation, betterment charges, vacant land tax, development charges, user charges and penalty recovery can be managed through one intelligence grid rather than through multiple fragmented registers.

The purpose of this note is to explain the CALI Fiscal Grid as the main AI model and to define its sub-models in a way that is easily understandable to state governments, municipal corporations, revenue departments, registration departments, urban development authorities and finance departments.

2. What is the CALI Fiscal Grid AI Model?

CALI Fiscal Grid is an AI-native land revenue intelligence model built on a parcel-indexed 3D digital twin grid. It is designed to identify, classify, value, assess, bill, collect and recover revenues from every fiscal land atom in a city, state or country.

In simple government language, CALI Fiscal Grid is a revenue intelligence layer sitting above existing land records, registry, municipal tax, planning, building permission and geospatial datasets. It does not require departments to abandon their existing systems. It ingests the existing data, reconciles it at the atomic unit level and creates a government-ready fiscal truth layer.

One-line definition

CALI Fiscal Grid is the AI model that converts land, buildings and units into revenue-intelligent Cognitive Land Atoms and enables government to maximise lawful land revenues with precision, transparency and speed.

3. Architecture in Government Terms

Layer	What it means	Government use	Revenue value
CALI Mother Platform	The AI-native platform and operating intelligence layer.	Receives data from departments and runs the fiscal intelligence system.	Creates one common revenue intelligence infrastructure.
CLA Atomic Intelligence	Every parcel, building, unit, shop, flat, commercial premise or taxable entity becomes a Cognitive Land Atom.	Allows government to see revenue at the smallest taxable unit.	Prevents revenue loss from unrecorded or under-classified units.
CALI PIN	Unique identity for each fiscal atom, including vertical and unit-level assets.	Connects property tax, registry, mutation, building plan and payments.	Enables tracking of revenue throughout the asset lifecycle.
Parcel-indexed 3D Digital Twin Grid	Spatial grid of land parcels, buildings and units.	Visual and analytical view of city revenue inventory.	Finds missing buildings, units, usage changes and

			value gaps.
Knowledge Graph and Vector Layer	Relationship engine connecting owners, parcels, buildings, transactions, dues, risks and fiscal history.	Finds hidden patterns, related entities and revenue leakage.	Improves enforcement, prioritisation and fraud detection.
Agentic AI Systems	AI agents that perform discovery, valuation, assessment, collection, recovery and compliance workflows.	Supports officials with automated recommendations, notices and dashboards.	Accelerates revenue realisation and reduces manual bottlenecks.

4. CALI Fiscal Grid: Sub-Models and Functions

The following sub-models are modules of the CALI Fiscal Grid. They should be explained to government as functional engines inside one integrated fiscal intelligence model.

1. CLA Discovery and Fiscal Inventory Model

Purpose: Creates a complete inventory of all revenue-relevant land, building and unit atoms within a jurisdiction.

Typical data inputs	Outputs / decisions enabled
Cadastral maps, property tax registers, building permissions, satellite/drone imagery, registry data, utility connections.	Missing-unit list, fiscal inventory map, taxable-unit universe, priority discovery dashboard.

Core functions:

i. Detects all parcels, buildings, flats, shops, offices, industrial units, vacant plots and special-use assets.
ii. Compares government tax rolls with cadastral maps, satellite/drone imagery, building permissions and registry records.
iii. Identifies missing fiscal units that are physically present but absent from tax or assessment registers.
iv. Classifies assets into fiscal, non-fiscal, exempt, disputed, blocked and conditional-fiscal categories.

Government utility: Gives municipal and revenue departments a complete view of the taxable universe instead of relying on outdated or partial assessment lists.

Revenue impact: Expands the tax base by identifying assets that are legally taxable but not presently billed or assessed.

2. CALI PIN and Fiscal Identity Model

Purpose: Assigns a unique CALI PIN to each parcel, building and unit-level fiscal atom.

Typical data inputs	Outputs / decisions enabled
Survey numbers, CTS numbers, property IDs, flat/shop numbers, registry IDs, building plan IDs, ownership records.	Universal fiscal ID, parent-child property hierarchy, 3D unit map, identity reconciliation register.

Core functions:

i. Creates a stable ID for every taxable land unit.
ii. Links parent parcel, building and unit hierarchy.
iii. Allows vertical asset mapping for apartments, commercial towers and mixed-use buildings.
iv. Connects tax, registry, ownership, mutation, valuation and payment records to one atomic identity.

Government utility: Helps departments avoid duplicate, missing or inconsistent property identities across systems.

Revenue impact: Creates a permanent revenue identity that supports billing, collection, recovery and transaction controls.

3. Fiscal Classification and Taxonomy Model

Purpose: Classifies every CLA using CALI Fiscal Master Taxonomy so that tax treatment becomes consistent and machine-readable.

Typical data inputs	Outputs / decisions enabled
Assessment codes, usage records, trade licences, occupancy certificates, electricity categories, GIS layers, field inspection data.	Fiscal tags, property class, usage-risk profile, tax-treatment recommendation.

Core functions:

i. Tags units as residential, commercial, mixed-use, industrial, hospitality, institutional, vacant, redevelopment, exempt, disputed or high-risk.
ii. Captures revenue attributes such as use type, occupancy status, rental potential, road frontage, zone, age, premium location and compliance status.
iii. Separates taxable, exempt, under-review, blocked and conditional revenue atoms.
iv. Creates consistent classification across municipal, revenue and registration departments.

Government utility: Provides a common language for departments to understand what each asset is and how it should be fiscally treated.

Revenue impact: Reduces under-assessment caused by wrong use classification, outdated category codes or missing commercial conversion.

4. Valuation Intelligence and Revenue Potential Model

Purpose: Estimates the correct fiscal value and revenue potential of each CLA.

Typical data inputs	Outputs / decisions enabled
Circle rates, transaction data, property tax assessments, rentals, location attributes, road access, infrastructure data, market indicators.	Revenue potential score, valuation gap report, revaluation queue, zone-wise uplift dashboard.

Core functions:

i. Compares assessed value with market value, ready reckoner/circle rate, transaction value, rental indicators and location intelligence.
ii. Identifies under-valued properties and zones.
iii. Recommends revaluation priority by fiscal upside.
iv. Supports dynamic valuation bands for property tax, stamp duty and land monetisation.

Government utility: Assists government in moving from static, outdated valuations to evidence-based and regularly updated fiscal valuations.

Revenue impact: Raises lawful revenue by correcting undervaluation, especially in high-value zones, commercial corridors and redevelopment areas.

5. Assessment and Demand Generation Model

Purpose: Converts discovered and valued CLAs into correct tax demand or revenue demand.

Typical data inputs	Outputs / decisions enabled
Tax rules, rate tables, exemptions, property attributes, usage classification, valuation inputs, historical demands.	Draft assessment roll, demand register, exception reports, official approval queue.

Core functions:

i. Computes tax liability based on applicable rules, rates, exemptions, rebates, penalties and property attributes.
ii. Generates proposed assessment changes for official review.
iii. Flags abnormal assessments and inconsistencies.
iv. Creates demand registers by ward, zone, parcel, building and unit.

Government utility: Improves speed and consistency of assessment work while keeping final government approval with authorised officials.

Revenue impact: Ensures that every eligible unit receives a correct demand notice and reduces revenue leakage from non-assessment or wrong assessment.

6. Billing, Collection and Payment Intelligence Model

Purpose: Improves billing accuracy, payment conversion and revenue collection efficiency.

Typical data inputs	Outputs / decisions enabled
Demand registers, payment history, citizen contact data, digital payment data, arrears records, ward-level collection data.	Collection priority list, payer segmentation, campaign dashboard, payment reconciliation report.

Core functions:

i. Creates clean billing lists with owner, occupier, unit and amount details.
ii. Segments payers by risk, due amount, payment history and collection probability.
iii. Recommends digital payment nudges, reminders, instalment options and collection campaigns.
iv. Tracks payment status and reconciles collections with demand.

Government utility: Allows the municipality or department to move from passive billing to intelligent collection management.

Revenue impact: Improves current-year collection efficiency and reduces accumulation of arrears.

7. Arrears Recovery and Enforcement Model

Purpose: Prioritises recovery of outstanding dues and assists officials with lawful enforcement workflows.

Typical data inputs	Outputs / decisions enabled
Arrears ledgers, ownership data, property value, legal status, notices, litigation, registry data, payment behaviour.	Recovery priority register, notice workflow, defaulter heatmap, enforcement decision support.

Core functions:

i. Identifies high-value defaulters and chronic non-payers.
ii. Ranks recovery cases by amount, legal feasibility, asset value and collection probability.
iii. Generates recommended notice sequences and escalation pathways.
iv. Links outstanding dues to property transaction controls where legally permitted.

Government utility: Gives officials a practical recovery cockpit instead of scattered arrears lists.

Revenue impact: Unlocks significant revenue from legacy outstanding dues and prevents future leakage.

8. Leakage, Fraud and Risk Detection Model

Purpose: Detects patterns that indicate revenue leakage, evasion, misclassification or manipulation.

Typical data inputs	Outputs / decisions enabled
Registry data, tax rolls, usage tags, imagery, trade licences, electricity usage categories, ownership networks, exemption records.	Leakage alerts, risk score, audit queue, suspicious-property register.

Core functions:

i. Finds properties taxed as residential but used commercially.
ii. Detects construction or units missing from tax rolls.
iii. Compares registry transactions with tax records and mutation records.
iv. Flags suspicious undervaluation, benami risk patterns, exemptions abuse and duplicate identities.

Government utility: Supports audit, vigilance and revenue protection without requiring manual checking of every property.

Revenue impact: Prevents future revenue loss and improves compliance credibility.

9. Transaction Control and Registry Linkage Model

Purpose: Connects fiscal status with property transfer, mutation and registration workflows.

Typical data inputs	Outputs / decisions enabled
Registration data, mutation records, property tax ledgers, no-dues certificates, ownership transfers, stamp duty records.	Transaction clearance alerts, dues-linked transfer dashboard, mutation-tax update queue.

Core functions:

i. Checks whether property taxes or land dues are outstanding before transfer.
ii. Links registry events with municipal tax records and mutation changes.
iii. Supports no-dues certificates and fiscal clearance where law allows.
iv. Alerts departments when ownership or usage changes after a transaction.

Government utility: Improves coordination between registration, revenue and municipal departments.

Revenue impact: Stops revenue leakage at the moment of property transaction and improves mutation-linked tax updates.

10. Stamp Duty and Circle Rate Optimisation Model

Purpose: Uses CLA-level valuation intelligence to support better stamp duty and ready reckoner/circle rate decisions.

Typical data inputs	Outputs / decisions enabled
Sale deeds, registration values, circle rates, location data, infrastructure proximity, development permissions, market comparables.	Rate-gap map, transaction anomaly report, rate-revision evidence pack, stamp revenue forecast.

Core functions:

i. Maps transaction values against local market and physical attributes.
ii. Finds undervalued corridors, rapidly changing zones and redevelopment pockets.
iii. Supports evidence for rate revision.
iv. Estimates stamp duty revenue upside from dynamic rate correction.

Government utility: Assists finance and registration departments in making data-led rate decisions.

Revenue impact: Improves stamp duty revenue and reduces undervaluation leakage.

11. Development Charges and Planning Revenue Model

Purpose: Captures revenues arising from development permission, change of use, FSI, premiums and infrastructure impact.

Typical data inputs	Outputs / decisions enabled
Building plans, permissions, FSI data, development control regulations, infrastructure projects, zoning maps, tax records.	Development revenue ledger, permission-to-tax conversion report, FSI/premium tracking dashboard.

Core functions:

i. Links building permissions to parcels and future units.
ii. Estimates development charges, betterment levy, impact fees and premium obligations.
iii. Tracks whether approved developments are converted into tax-paying units.
iv. Monitors redevelopment and high-growth zones.

Government utility: Helps urban development authorities and municipalities ensure that planning permissions convert into correct revenues.

Revenue impact: Captures revenue from urban growth, redevelopment and infrastructure-induced land value increases.

12. Vacant Land, Underused Land and Monetisation Model

Purpose: Identifies vacant, idle and underused land assets with fiscal potential.

Typical data inputs	Outputs / decisions enabled
Land ownership records, land-use plans, vacant land maps, market value, infrastructure access, encumbrance status.	Vacant land inventory, monetisation score, underused asset list, revenue strategy map.

Core functions:

i. Maps vacant parcels and low-yield assets.
ii. Estimates potential revenue through vacant land tax, lease, auction, redevelopment, PPP or better use.
iii. Identifies government-owned land that can be monetised lawfully.
iv. Prioritises land parcels based on revenue potential and public value.

Government utility: Supports land-owning departments, development authorities and municipal bodies in unlocking dormant asset value.

Revenue impact: Creates new revenue streams beyond ordinary property tax.

13. Revenue Forecasting and Budget Intelligence Model

Purpose: Forecasts future land revenues and models policy options for government finance planning.

Typical data inputs	Outputs / decisions enabled
Historical collections, arrears, growth data, valuation changes, coverage expansion, payment behaviour, policy assumptions.	Revenue forecast, uplift scenario, target dashboard, budget intelligence note.

Core functions:

i. Forecasts ward-wise, zone-wise and city-wise revenues.
ii. Simulates impact of tax-rate changes, valuation updates, improved coverage and recovery campaigns.
iii. Builds 3-year and 5-year revenue pathways.
iv. Supports budget planning and performance monitoring.

Government utility: Gives finance departments a forward-looking revenue model rather than a historical collection statement.

Revenue impact: Helps governments plan realistic revenue targets and measure uplift from reforms.

14. Citizen Service and Compliance Model

Purpose: Improves citizen-facing clarity, dispute reduction and voluntary compliance.

Typical data inputs	Outputs / decisions enabled
Citizen records, property details, demand notices, grievance history, payment records, classification tags.	Citizen property profile, explainable demand note, correction queue, grievance dashboard.

Core functions:

i. Creates explainable tax demands based on CLA attributes.
ii. Supports citizen self-verification of property details.
iii. Flags mismatch cases for correction.
iv. Enables digital grievances, corrections and transparent status tracking.

Government utility: Makes revenue reform citizen-friendly and reduces resistance by improving transparency.

Revenue impact: Improves voluntary payment and reduces disputes caused by inaccurate or unexplained assessment.

15. Departmental Command Centre and Agentic Workflow Model

Purpose: Provides dashboards, AI agents and workflows for officials across departments.

Typical data inputs	Outputs / decisions enabled
All sub-model outputs, officer workflows, departmental targets, notices, approvals, collections, recovery status.	Command centre, action tracker, officer dashboard, AI-generated decision notes.

Core functions:

i. Creates role-specific dashboards for commissioners, collectors, assessors, ward officers, registry officials and finance departments.
ii. Assigns AI agents for discovery, valuation, recovery, audit and compliance tasks.
iii. Tracks officer-wise and ward-wise progress.
iv. Generates decision notes and action recommendations.

Government utility: Converts the fiscal grid into an operational command centre for daily government use.

Revenue impact: Ensures that insights are converted into action, demands, collections and recovery.

6. How the Sub-Models Work Together

The power of the CALI Fiscal Grid is that the sub-models do not operate as isolated applications. They operate in a loop on the same CLA base.

1. Discover the taxable universe using CLA Discovery and the parcel-indexed 3D digital twin.
2. Assign identity using CALI PIN and parent-child parcel-building-unit hierarchy.
3. Classify each atom using CALI Fiscal Master Taxonomy.
4. Estimate value and revenue potential using Valuation Intelligence.
5. Generate correct assessment and demand using the Assessment Model.
6. Collect current dues using the Billing and Collection Model.
7. Recover arrears using the Recovery and Enforcement Model.
8. Detect leakage through Risk and Audit Intelligence.
9. Link tax status with registry, mutation and transaction controls.
10. Forecast future revenue and guide policy through the Budget Intelligence Model.

7. Government Utility by Department

Department / authority	Main pain point	CALI Fiscal Grid utility	Expected revenue effect
Municipal Corporation / ULB	Incomplete property tax base; weak collection; outdated assessment.	Missing unit discovery, valuation correction, demand generation, collection and recovery dashboards.	Higher property tax coverage, better current collection and recovery of arrears.
Revenue Department	Fragmented land records and weak fiscal visibility at parcel level.	CLA, CALI PIN, parcel-level fiscal identity and land revenue intelligence.	Improved land revenue mapping and better mutation-linked revenue capture.
Registration / IGR Department	Undervaluation, mismatch between registry and tax records.	Transaction linkage, stamp valuation intelligence and no-dues controls.	Improved stamp duty and registration revenue.
Urban Development Authority	Development permissions not always converted into fiscal revenue.	Planning revenue, development charge and FSI/premium tracking model.	Better capture of development-linked and infrastructure-linked revenues.
Finance Department	No granular future revenue model for land revenues.	Revenue forecasting, scenario modelling and fiscal dashboards.	Better budgeting and measurable revenue uplift.
Audit / Vigilance / Enforcement	Manual detection of leakage and fraud is slow.	Risk scoring, anomaly detection and recovery prioritisation.	Reduced leakage and stronger compliance.
Citizen Services	Tax disputes and lack of transparency.	Explainable property profile, digital correction and grievance workflows.	Higher trust and voluntary compliance.

8. Proposed Government Implementation Roadmap

Phase 1: Data ingestion and CLA creation: Ingest existing cadastral, municipal, registry, building permission and imagery data. Create initial CLA inventory and CALI PIN structure.

Phase 2: Fiscal discovery and mismatch audit: Compare tax roll with real-world property universe. Identify missing units, undervalued assets and classification mismatches.

Phase 3: Valuation, assessment and demand correction: Run valuation intelligence, generate proposed assessment changes and produce official review workflows.

Phase 4: Collection and recovery campaign: Prioritise current dues, arrears and high-value defaulters. Launch ward-wise collection dashboards and enforcement workflow.

Phase 5: Registry, mutation and transaction integration: Link outstanding dues, property transfer, mutation and registration workflows where legally and administratively permitted.

Phase 6: Command centre and continuous intelligence: Create a fiscal command centre for continuous revenue optimisation, forecasting and compliance monitoring.

9. Key Government Outcomes

i. Complete fiscal inventory of parcels, buildings and units.
ii. Identification of missing taxable units and under-assessed properties.
iii. Creation of a CALI PIN-based fiscal identity for every taxable land atom.
iv. Evidence-based valuation and revaluation support.
v. Improved current-year tax collection and arrears recovery.
vi. Better stamp duty, registration and mutation-linked fiscal controls.
vii. Leakage detection for usage mismatch, undervaluation and exemption abuse.
viii. Forecasting of 3-year and 5-year land revenue growth.
ix. Transparent citizen-facing property profile and explainable tax demands.
x. Government command centre for daily revenue intelligence and action tracking.

10. Why CALI Fiscal Grid is a New Category of Government Infrastructure

Traditional government systems are usually register-centric: a property tax register, a cadastral map, a mutation register, a registry database, a building permission file, a collection ledger and an arrears list. CALI Fiscal Grid is atom-centric. It starts from the smallest unit of land intelligence - the CLA - and attaches every legal, spatial, fiscal, valuation, usage and payment attribute to that atom.

This makes CALI Fiscal Grid a new category of AI-native fiscal infrastructure for land revenues. It is not merely software for assessment or collection. It is a cognitive land revenue grid that continuously discovers, classifies, values, bills, collects, audits and forecasts revenue from land assets.

Message for the Government

The government does not need many separate AI products for recovery, valuation, collection and leakage. It needs one CALI Fiscal Grid AI Model with multiple sub-models operating on the same CLA truth layer. This is simpler to procure, easier to govern, easier to integrate and more powerful for revenue maximisation.

12. Concluding Note

For government, the CALI Fiscal Grid is positioned as the master AI model for land revenue maximisation. Its sub-models are not separate brands. They are specialised fiscal intelligence engines inside one integrated grid. This gives CALI a strong category-defining position as an AI-native land revenue infrastructure platform.