

// AFRICA'S RESERVE PROTOCOL

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# Whitepaper

*Sovereign tokenization  
for the African  
continent.*

// UPDATE NOTICE · 00

# Doctrinal revision — May 2026.

« A protocol is not what it claims. It is what is enshrined. The version is the proof. »

This Whitepaper v4 integrates the comprehensive revision of the MANSSA corpus decided by the Direction in May 2026. The revision covers:

- Tiered treasury trajectory — five paliers, central horizon 2031 – 2032.
- Reinforced DAO governance — anti-whale 5%, two-tier timelock, Security Council of 7.
- Bicameral oracle architecture — proprietary HSM/TEE core + Chainlink OCR bridge.
- Revised operational tokenomics — vesting curves, burn pool, bonding mechanics.
- Tri-jurisdictional desolidarization — ADGM (Foundation + Ventures) · CFC (Labs · OHADA Morocco law), operationally distinct.
- Brand differentiation — MANSSA® ≠ MANSA, two-S spelling, registered trademark filings.

## // SUPERSEDED

Whitepaper v3.0 of 8 May 2026 is hereby superseded. Archived as historical reference only. All public-facing communications must reference v4 from May 2026 onwards.

The doctrinal architecture is published as three canonical volumes: this Whitepaper (VOL. I, primary), the Litepaper (VOL. II, executive synthesis), and the Pitch Deck (VOL. III, investor presentation). All three documents are versioned in lockstep — v4 across the corpus.

## // TABLE OF CONTENTS

# Contents.

01	Executive Summary	04
02	The Thesis – Capital is moving, infrastructure is missing	08
03	Heritage – From Mansa Musa 1324 to MANSSA®	14
04	The Five Primitives	20
05	\$MANSSA Reserve Token	24
06	DAO Constrained Governance	32
07	RWA – \$aAFRICA + \$gAFRICA	42
08	KETZAL HPC + Bicameral Oracle	52
09	LaunchLab Web3 Accelerator	62
10	Tokenomics & Allocation	68
11	Treasury Trajectory P1 – P5	74
12	Sovereign Architecture – Three Entities	78
13	Brand Doctrine – 8 Principles Anti-ZiG	82
14	Roadmap & TGE Horizon	86
15	Canonical Documents	89
–	Closing – Engage with MANSSA®	91
–	Annexes (external sources)	92

## // HOW TO READ

Each section opens with a coloured chapter page bearing its number, eyebrow, and manifesto.

Pillar sections (05–09) carry their pillar's accent throughout: \$MANSSA gold, DAO green, RWA earth, KETZAL blue, LaunchLab red. Doctrinal sections (01–04, 10–14) carry the gold accent of the protocol's reserve.

03

Tables marked with the cardinal pill are doctrinally enshrined – modification requires constitutional

# 01

// SECTION · 01

## Executive summary.

« A continent that  
computes is a continent  
that prices its own  
value. »

**DOCTRINE**  
RESERVE PROTOCOL

**HORIZON**  
2031 - 2032

**TARGET**  
10 BN USD

# MANSSA® is the reserve protocol of Africa.

It binds, on a single integrated stack, the tokenization of African real-world assets, a sovereign-grade decentralized governance, a Web3 accelerator focused on the continent, and a high-performance compute infrastructure rooted in Morocco — under a triple-jurisdiction legal architecture combining Abu Dhabi Global Market and Casablanca Finance City.

The Protocol does not duplicate existing tokenization platforms. It opposes the systematic extraction of African value through foreign tokenization and proposes the inverse: a stack where pricing, custody, audit, governance, and computation are **sovereignly performed**.

## // FIVE PRIMITIVES, ONE ECOSYSTEM

\$MANSSA reserve token, MANSSA DAO, RWA Pillar (tokenizing real-world assets through partner SPVs), LaunchLab (incubation), HPC KETZAL (cross-cutting infrastructure).

## // CARDINAL TARGET

**10 billion USD treasury**, expressed as a tiered trajectory with central horizon **2031 – 2032**.

## // EIGHT ANTI-ZIG PRINCIPLES

Non-negotiable structural commitments foundational to the Protocol's design.

## // FIRST-HOLDER DOCTRINE

*Holders come first, always.*

## The problem in three data points

- Africa hosts **18% of world population** and produces **less than 1% of world compute capacity** (*USGS 2025; IEA*).
- The continent generates **one-third of strategic minerals globally** yet captures **less than 5% of their tokenized financial value** (*BCG Tokenization Report 2024; RWA.xyz May 2026*).
- Tokenized RWA reached **30 billion USD globally in early 2026**, growing at three-digit annual rates — the majority of emissions touching African assets are operated from outside the continent (*Chainalysis Africa Report 2025*).

# The solution in five primitives.

MANSSA is the infrastructure layer that makes African digital sovereignty **operational, not aspirational.**

PRIMITIVE	FUNCTION	TOKEN
<b>Reserve</b>	Treasury-backed reserve currency · protocol flywheel	<b>\$MANSSA</b>
<b>DAO</b>	On-chain governance · First-Holder protection	<b>sMANSSA</b>
<b>RWA</b>	Agricultural + gold tokenization via partner SPVs	<b>\$aAFRICA · \$gAFRICA</b>
<b>LaunchLab</b>	Web3 accelerator – Africa-native DeFi, RWA tooling, identity	–
<b>HPC KETZAL</b>	Sovereign compute · bicameral oracle · 8 capabilities	–

# Financial snapshot.

PHASE	TREASURY TARGET	CENTRAL HORIZON
P1	100 M USD	T+12 months
P2	500 M USD	T+24 months
P3	1 Bn USD	T+36 months
P4	3 Bn USD	T+48 months
<b>P5</b>	<b>10 Bn USD</b> <b>CARDINAL</b>	<b>2031 – 2032</b>

T = Token Generation Event date (indicative H1 2027).

# Why now.

Three structural conditions converge at this precise moment: the maturation of the ADGM DLT Foundation legal regime for Web3 protocols; the emergence of regulated financial activity frameworks for African asset tokenization; and the critical window before foreign tokenization infrastructure captures the continent’s sovereign RWA pipeline at scale.

**// DOCTRINE**

The window is open. MANSSA moves to close it — **from the inside.**

# 02

// SECTION · 02

## The thesis.

« Sovereignty is not  
declared. It is computed.  
»

**ASYMMETRY**  
STRUCTURAL

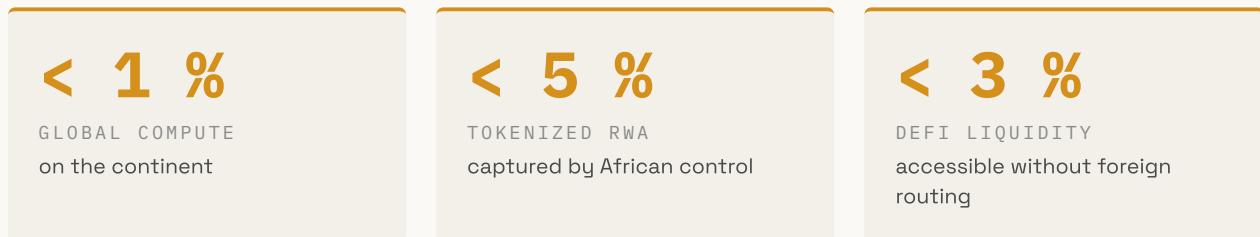
**WINDOW**  
OPEN

**CONDITIONS**  
THREE

## The asymmetry is *structural*, not accidental.

Africa controls approximately **30 % of the world's strategic mineral reserves** — lithium, cobalt, coltan, manganese, gold, platinum group metals. It hosts the world's youngest and fastest-growing population. It is the site of the most dynamic expansion of agricultural production over the next three decades.

And yet:



This is not a market failure. It is a **sovereignty lock** — structural, layered, and self-reinforcing.

## Why existing solutions do not solve it.

**Global RWA platforms** (Ondo Finance, Maple Finance, Centrifuge) operate sovereign infrastructure correctly — but from the outside. They tokenize African assets, but the pricing models, custody logic, audit standards, and governance are set by non-African frameworks. African value is extracted to foreign balance sheets.

**Regional blockchain initiatives** (Celo Africa DAO, AyaHQ, Lisk Incubation Hub) are constructive and MANSSA engages them as strategic partners. They are, however, incubation-oriented. They do not provide the infrastructure layer — oracle, HPC, regulated legal vehicle, institutional treasury mechanics — that makes sovereign tokenization possible at protocol scale.

**CBDC efforts** from African central banks are promising but institution-bound. They operate within the monetary sovereignty logic of individual states. MANSSA is a *continental reserve instrument*, not a national monetary tool.

### // THE MANSSA THESIS IN ONE SENTENCE

*Africa needs to own the compute, the pricing, the custody, the governance, and the capital formation — not just the assets. MANSSA builds that ownership infrastructure.*

# 05

// SECTION · 05

## **\$MANSSA** reserve **token.**

« Holders come first,  
always. »

### **SUPPLY**

100 M · FIXED

### **BONDING**

30D + 180D

### **BURN**

5% MECHANICAL

## Doctrinal position.

\$MANSSA is the protocol's **native reserve currency**. It is not a utility token. It is not a governance token. It is not a payment instrument. It is a treasury-backed reserve: every \$MANSSA in circulation is supported by a fundamental asset value held in the protocol treasury.

This distinction is operational, not semantic. The **First-Holder doctrine** — *Holders come first, always* — is enshrined at the foundational level of the Protocol's design.

### // FIRST-HOLDER · OPPOSABLE

Any protocol decision arbitrates in favour of \$MANSSA holders. No clause can dilute, circumvent, or subordinate this priority.

## Allocation.

Total supply: **100 million tokens** — fixed, non-inflationary. ERC-20 on Ethereum mainnet.

ALLOCATION	SHARE	PURPOSE
<b>Treasury</b>	<b>35 %</b>	<b>Sovereign treasury — cardinal target 10 Bn USD</b>
<b>Bonding</b>	<b>25 %</b>	Primary distribution mechanic — programmed accumulation
<b>Team</b>	<b>15 %</b>	Long-horizon alignment vesting
<b>LaunchLab</b>	<b>10 %</b>	LaunchLab pillar operations and portfolio support
<b>Ecosystem</b>	<b>10 %</b>	Grants, strategic partnerships, institutional integrations
<b>Community</b>	<b>5 %</b>	Initial distribution, ambassadors, translations

*These allocations are foundational to the Protocol's economic design. Modification requires a constitutional amendment with super-majority quorum — the same threshold as the eight anti-ZiG principles.*

## Bonding mechanics.

« *Bonding is not a trade. It is a commitment.* »

The bonding mechanism is designed to make participation in the protocol's capital formation an act of long-term alignment rather than an arbitrage opportunity. The mechanics are designed to **protect the token from sentiment-driven reversals** and to ensure that the treasury grows with durable, committed capital.

PARAMETER	VALUE	PURPOSE
<b>Cliff</b>	<b>30 days after subscription</b>	Minimum commitment lock
<b>Linear vesting</b>	<b>180 days after cliff</b>	Total window: 210 days from subscription
<b>No accelerated vesting</b>	Absolute – no exceptions	Prevents early-exit arbitrage
<b>Dynamic discount</b>	<b>2 % to 15 %</b>	Indexed on aggregate demand + treasury / float ratio
<b>Daily cap</b>	<b>1 % of circulating / day</b>	Prevents treasury dilution spikes (Phase 1)
<b>Circuit-breaker</b>	Discount > 18 % or spot drop > 20 % / 24h	Automatic protection mechanism

### // CIRCUIT-BREAKER

The circuit-breaker disengages only by restricted-Direction decision. **It cannot be bypassed by governance vote** during the engagement window.

## Treasury distribution.

Every USDC entering the protocol treasury is allocated according to a circular distribution model – fully traceable on-chain.

SHARE	ALLOCATION	PURPOSE
<b>40 %</b>	African pilot projects	Direct funding of high-impact real projects
<b>25 %</b>	Staking rewards (sMANSSA)	Automatic remuneration of loyal holders
<b>15 %</b>	Protocol-Owned Liquidity	Permanent liquidity – never withdrawn
<b>10 %</b>	R&D and KETZAL infrastructure	Infrastructure funding and evolution
<b>7 %</b>	Operational treasury	RWA acquisition, audits, legal,

# 03

// SECTION · 03

## Heritage — 1324.

« The name is not a package. The name is the project itself. »

**1324**  
BLUEPRINT

**MALI EMPIRE**  
1.29M KM<sup>2</sup>

**TIMBUKTU**  
700K MANUSCRIPTS

# 1324.

In 1324, Mansa Musa I, emperor of the Mali Empire, conducted his *hajj* pilgrimage from Niani to Cairo to Mecca — travelling across the continent with a retinue of 60,000 people and reportedly carrying enough gold to destabilize the Egyptian economy for a decade through currency deflation.

The image is not one of mere wealth. It is one of **sovereign capital formation at continental scale**.

Mansa Musa did not need a permission slip from a foreign clearing house. He did not route his treasury through a correspondent bank in Basel. He moved capital as a sovereign — on his own infrastructure, by his own rules, toward his own strategic objectives.

// BLUEPRINT — NOT NOSTALGIA

**1324 is not nostalgia. It is a blueprint.**

The Mali Empire at its height was the largest producer and controller of gold in the known world. It priced its own commodity, distributed on its own terms, and built institutions — Timbuktu’s scholarly infrastructure among them — that served as knowledge capital for generations.

LEGACY DIMENSION	HISTORICAL REALITY	MANSSA® TODAY
Capital formation	Gold treasury · trans-Saharan trade	Protocol treasury · tokenized RWA
Governance	Royal law · continental jurisdiction	DAO governance · tri-jurisdiction
Knowledge	Timbuktu · 700,000 manuscripts	HPC KETZAL · sovereign compute
Sovereignty	Self-priced, self-distributed capital	On-chain, self-governed protocol

Mansa Musa I (1280–1337), 10th Mansa of the Mali Empire, is recognized by historians as the wealthiest individual who ever lived — with an estimated fortune of \$400–415 billion in today’s values. MANSSA® takes that lineage seriously. Not as branding. As doctrine.

## The name.

MANSSA® — two S, registered trademark — is a direct invocation of *Mansa*, the Manding word for *king* or *emperor*. The doubling of the S is not decorative. It marks the transformation: from a historical title to a protocol identity, from a personal sovereign to a collective sovereignty architecture.

The name is defended not by uniqueness in the abstract but by the rigor of its instantiation: MANSSA® is spelled with two S because that precision is the proof of intent. Brand deposits filed across OMPI/Madrid, USPTO, EUIPO, OAPI, ARIPO. The sub-brands follow the same discipline: \$aAFRICA, \$gAFRICA, sMANSSA, LaunchLab RWA-Africa — each orthographically exact, each legally filed.

### // DISAMBIGUATION

MANSSA® is unaffiliated with any other entity using a similar name. A disambiguation page is published at [manssa.io/about](https://manssa.io/about).

## The Protocol as heritage instrument.

« *Pioneer. Sovereign. First-Holder. Africa's reserve protocol.* »

MANSSA® is not built to be a product that Africa uses. It is built to be an institution that Africa owns. The distinction is foundational.

A product can be acquired, white-labeled, deprecated, or replaced by a cheaper foreign equivalent. An institution — one that controls pricing models, oracle data feeds, treasury mechanics, and governance architecture — creates durable, compounding sovereign capital.

The eight anti-ZiG principles, foundational to the Protocol's design, are the operational translation of this heritage into governance rules. Each principle is the specific inversion of a failure mode that extracted African value in historical tokenization experiments.

# Heritage encoded in protocol rules.

Each anti-ZiG principle inverts a specific historical failure mode:

- **Not money** — inverts currency colonialism.
- **Issuer ≠ regulator** — inverts captured oversight.
- **Tier-1 audits** — inverts opacity.
- **130–150% overcollateralization** — inverts thin-margin extraction.
- **Physical redemption** — inverts paper-only tokenization.
- **Auto-arbitrage** — inverts manual intervention and political pricing.
- **Reserves on-chain** — inverts off-chain custody opacity.
- **Infra ≠ issuer** — inverts vertical integration that concentrates risk on a single entity.

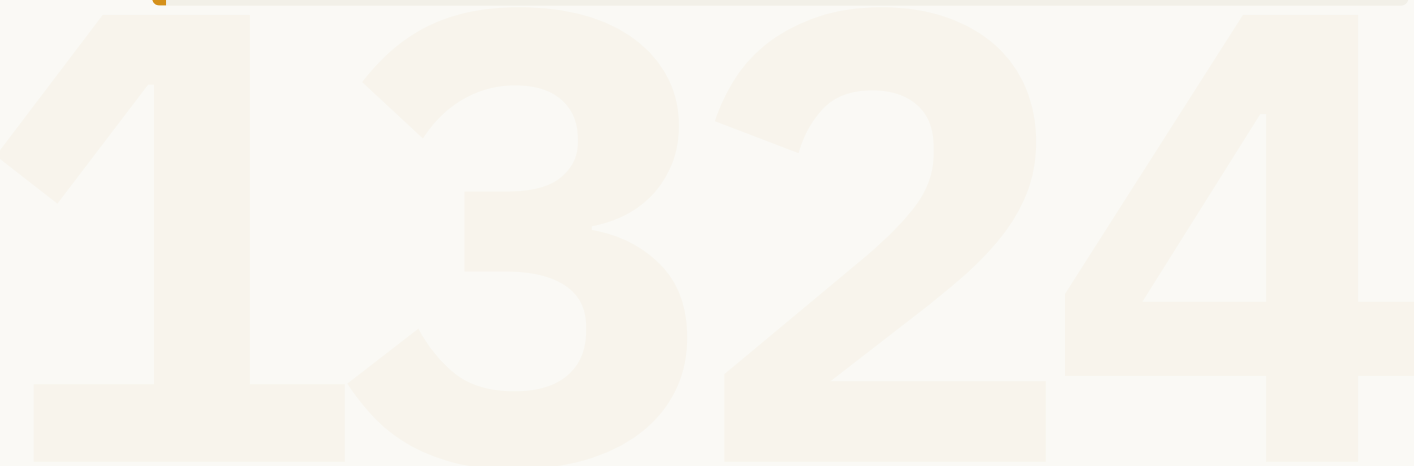
Each rule is a lesson from history, encoded in protocol governance.

## Then and now.

THEN — MALI EMPIRE	TODAY — MANSSA® PROTOCOL
Caravan trade across the continent	Pan-African Web3 protocol — 54 markets
Gold treasury, self-priced	Protocol treasury · \$MANSSA reserve
Royal governance · law · justice	Decentralized DAO governance
Timbuktu manuscripts · 25,000 students	HPC KETZAL · sovereign compute

// DOCTRINE

MANSSA revives this legacy — not with physical gold, but with the currency of the 21st century: **data, code, and digital sovereignty.**



# 04

// SECTION · 04

## The **five** **primitives.**

« *Five primitives. One ecosystem.* »

**RESERVE**  
\$MANSSA

**DAO**  
SMANSSA

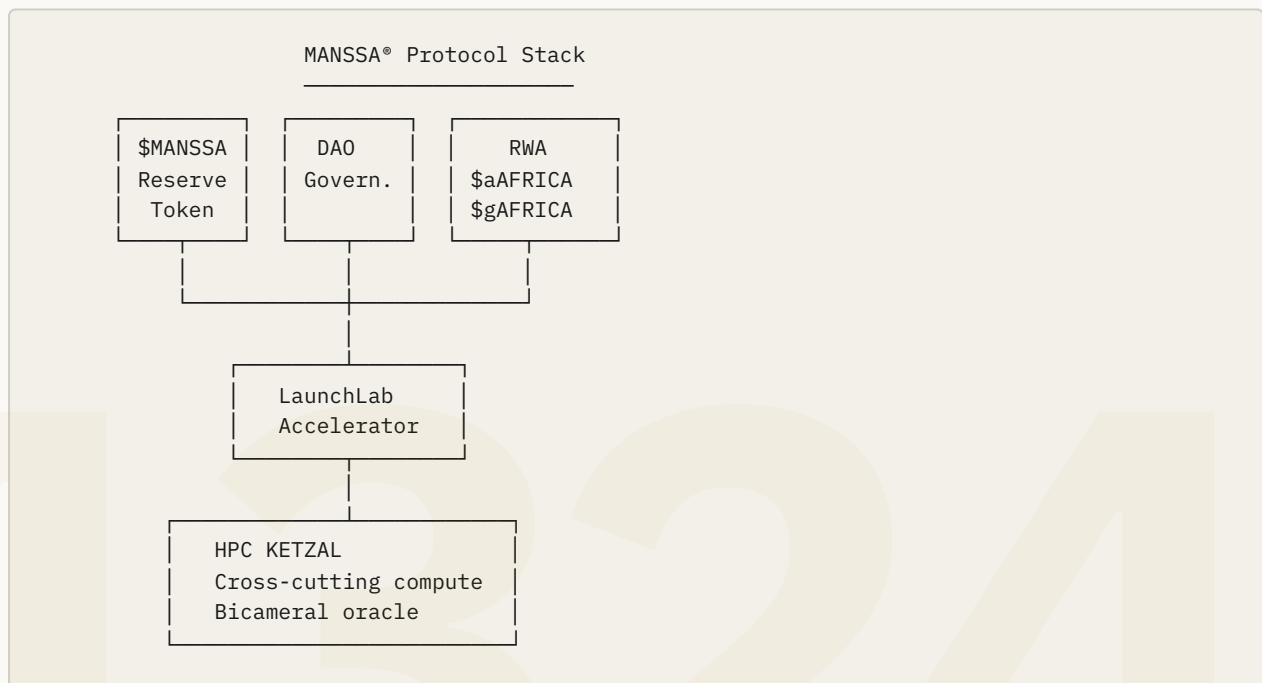
**RWA**  
\$AAFRICA · \$GAFRICA

## Five interconnected primitives.

MANSSA is built as five interconnected Web3 primitives. Each functions standalone. Together, they form a complete infrastructure where each pillar reinforces the others.

#	PRIMITIVE	FUNCTION	TOKEN
01	<b>\$MANSSA Reserve</b>	Treasury-backed reserve currency · protocol flywheel	<b>\$MANSSA</b>
02	<b>DAO Governance</b>	On-chain governance · First-Holder protection	<b>sMANSSA</b>
03	<b>RWA Pillar</b>	Agricultural + gold tokenization via partner SPVs	<b>\$aAFRICA · \$gAFRICA</b>
04	<b>LaunchLab</b>	Web3 accelerator – Africa-native DeFi, RWA tooling, identity	–
05	<b>HPC KETZAL</b>	Sovereign compute · bicameral oracle · 8 capabilities	–

## Stack architecture overview.



## The five primitives at a glance.

### // 01 – \$MANSSA RESERVE TOKEN

Treasury-backed reserve currency. 100M tokens fixed supply. ERC-20 on Ethereum mainnet. Primary distribution via bonding with 210-day commitment window. Every \$MANSSA in circulation is supported by a fundamental asset value held in protocol treasury.

### // 02 – DAO CONSTRAINED GOVERNANCE

On-chain governance body. \$MANSSA holders arbitrate three powers: treasury allocation, protocol parameters, community direction. Anti-whale cap 5%. Quorum 10%. Two-tier timelock. Security Council 7 independent mandataries with suspension power only. No TGE before full operationalization.

### // 03 – RWA PILLAR

Tokenization of African real-world assets through partner-SPV model. MANSSA Foundation is the infrastructure provider — technology, methodology, standards. Emissions operated by legally-separate partner SPV issuers. Sub-brands: \$aAFRICA (agriculture, Phase 1) and \$gAFRICA (gold, Phase 2).

### // 04 – LAUNCHLAB

Web3 accelerator operated by MANSSA Ventures Ltd under FSRA Cat. 3C. Two cohorts per year. Three thesis verticals: Africa-native DeFi, RWA tooling, on-chain identity. Equity + token capture model.

### // 05 – HPC KETZAL

Cross-cutting compute infrastructure. Not a fourth pillar — the engine that operates all three. Located in Casablanca under MANSSA Labs SARL (CFC 8.75%). Eight operational capabilities (C1–C8). Bicameral oracle: proprietary HSM/TEE layer + Chainlink OCR bridge.

## The flywheel.

Treasury inflows from bonding → fund RWA acquisitions and KETZAL infrastructure → generate oracle revenues and RWA yields → deepen treasury → support LaunchLab investments → generate portfolio returns → reinforce treasury.

### // CLOSED ECOSYSTEM

*Each pillar produces revenue flows that compound into the others. The Protocol is designed as a closed ecosystem — value does not exit.*

# 06

// SECTION · 06

## DAO governance.

« A robust DAO is a  
constrained DAO. »

**ANTI-WHALE**  
5% CAP

**QUORUM**  
10% MIN

**COUNCIL**  
7 MANDATARIES

## Design principle.

« *The First-Holder doctrine is protected by structural brakes, not by promises.* »

The MANSSA DAO is designed as a **constrained governance system** — not a maximally-open free-for-all. The constraints are the product: without structural brakes, DAO governance historically degrades into whale capture, governance spam, or protocol capture by adversarial capital.

Each constraint is the specific inversion of a historically-documented DAO attack vector.

## Governance framework.

PARAMETER	VALUE	ATTACK VECTOR ADDRESSED
<b>One token = one vote</b>	With anti-whale cap	Plutocracy prevention
<b>Anti-whale cap</b>	5% per address (Sybil-aggregated)	Whale capture
<b>Quorum</b>	10% minimum participating supply	Governance apathy attacks
<b>Timelock – ordinary</b>	48 hours	Flash loan governance attacks
<b>Timelock – sensitive</b>	168 hours	Coordinated governance capture
<b>Execution delay</b>	24 hours post-timelock	Security Council intervention window
<b>Anti-proposal-stuffing</b>	Max 1 proposal per address / 7-day window	Spam governance
<b>Submission deposit</b>	10,000 \$MANSSA (returned if non-fraudulent)	Low-cost harassment attacks

## Sensitive decisions – 168h timelock.

The following parameters require the full 168-hour timelock and are subject to Security Council review during the execution delay:

- Bonding parameters (discount range, daily cap, circuit-breaker thresholds).
- Treasury moves above 1% of circulating supply.
- Multi-sig signatories (additions, removals).
- Smart contract deployments and upgrades.
- Oracle parameters (price feed sources, aggregation logic).

## Security Council.

**Seven independent mandataries.** Intervention quorum: **5 of 7**. Powers: **suspension only – never adoption**. The Security Council cannot pass proposals; it can only pause execution of proposals that have passed governance and are in the execution delay window.

SEAT	PROFILE
1	Crypto-specialized lawyer
2	Smart-contract auditor
3	Tokenomic economist
4	ADGM representative
5	CFC representative
6	Senior Web3 developer
7	Community-designated holder

Two-year mandate, renewable once. Council members are publicly identified, legally mandated, and compensated via the operational treasury allocation.

### // TGE CONDITION · ABSOLUTE

**No Token Generation Event can occur before full operationalization of the above framework.** This prohibition is absolute and cannot be waived by governance vote.

## Three powers of the DAO.

### // POWER 01 – TREASURY

Allocation of protocol capital. Bonding decisions, RWA partnerships, LaunchLab grants, strategic buybacks. On-chain spending votes — diversified treasury — public KETZAL dashboard.

### // POWER 02 – PARAMETERS

Tunable protocol parameters by holders, not insiders. Bonding ratios, fees, collateralization thresholds. Protocol tuning by vote — fees governance — risk parameters.

### // POWER 03 – COMMUNITY

Build pan-African local hubs. Funded ambassadors, contributor grants, continental events. Ambassador program — contributor grants — MANSSA Days continental.

## Mandatory annual audits.

Governance contracts are audited annually by **two independent tier-1 cabinets** drawn from: Trail of Bits, OpenZeppelin, ConsenSys Diligence, CertiK, Halborn.

Reports are published in full within 30 days of receipt. Critical vulnerabilities not corrected within 60 days trigger automatic suspension of affected governance functions by the Security Council.

### // DOCTRINE

The protocol belongs to those who hold it. **Founders vest like everyone else. No clause dilutes the priority.**

# 07

// SECTION · 07

## RWA — real assets.

« Tokenize without  
extracting. Price without  
capturing. »

**\$AAFRICA**  
AGRICULTURE — PHASE 1

**\$GAFRICA**  
GOLD — PHASE 2

**OVERCOLLAT.**  
130-150%

## Design principle – partner-SPV model.

The MANSSA RWA Pillar operates on a **partner-SPV model**. MANSSA Foundation is the infrastructure provider: technology, methodology, oracle standards, audit framework. Token emissions are operated by partner SPV issuers – legally separate from the Foundation.

This is not a technicality. It is the foundational principle of the Protocol’s anti-capture architecture:

- MANSSA Foundation never issues tokens directly – it provides infrastructure.
- Each emission is operated by a SPV structured for that specific emission.
- The SPV bears the regulatory responsibility for the emission.
- MANSSA Foundation receives service fees: oracle, audit, custody-as-a-service, compliance-as-a-service.

### // ANTI-ZIG CONDITION · ABSOLUTE

The eight anti-ZIG principles apply to every emission – simultaneously and without exception. Any emission seeking to use MANSSA infrastructure that cannot demonstrate compliance with all eight is **rejected at the infrastructure layer**.

## Asset pipeline.

CATEGORY	SUB-TOKEN	PHASE	STATUS
Agricultural commodities	<b>\$aAFRICA</b>	Phase 1 (post-TGE)	Pipeline active
LBMA-certified gold	<b>\$gAFRICA</b>	Phase 2 (T+12-T+36)	Structured
Structured receivables	–	Phase 2	Framework defined
Green energy	–	Phase 3	Roadmap
Project bonds	–	Phase 2–3	Roadmap

## \$aAFRICA – Agricultural commodities (Phase 1).

« Africa is not just a resource continent. It is the world's agricultural future. »

Phase 1 covers: cocoa (West African origin, IoT-traced, EUDR-compliant), coffee (Ethiopian and Rwandan specialty grades), vanilla (Madagascar and Comoros certified), cotton (Francophone West Africa, fair-trade certified where applicable).

PARAMETER	VALUE
Overcollateralization	<b>130-150% – on-chain verifiable</b>
Audit	Quarterly – tier-1 (KPMG, BDO, PwC, Deloitte, EY)
Physical redemption	Enshrined – holders can withdraw underlying commodity
Custody	Local certified producers and cooperatives
Regulatory compliance	EUDR (EU Deforestation Regulation)

IoT sensor integration in the cocoa supply chain enables real-time traceability from farm to vault to blockchain. This is not a differentiator – it is a compliance requirement for EUDR access to EU markets, and therefore a structural asset of the \$aAFRICA emission pipeline.

## \$gAFRICA – LBMA-certified gold (Phase 2).

PARAMETER	VALUE
Custody standard	LBMA-certified (London Bullion Market Association)
Overcollateralization	<b>130-150% – on-chain verifiable</b>
Audit	Quarterly – tier-1 cabinet
Physical redemption	Enshrined – holders can withdraw physical gold
Reporting	Daily reserves update – public on-chain read

## RWA Oversight Committee.

The **RWA Oversight Committee** is the dedicated supervisory body for all RWA emissions. Composed of independent third parties. Functions:

- Continuous audit of active emissions against the eight anti-ZiG principles.
- Opposability control — emissions not meeting standards are flagged for suspension.
- Quarterly public reporting on the status of all active SPV emissions.
- Annual review of overcollateralization ratios and custody standards.

## Extended asset pipeline.

Beyond Phase 1 agricultural and Phase 2 gold, the MANSSA RWA infrastructure supports three additional pipeline categories:

- **Carbon and agri pipeline:** traced carbon credits via IoT traceability (Connected Farm sensors), EUDR compliance infrastructure, measurable emission reductions tied to African agricultural transitions.
- **Receivables pipeline:** actuarial rating, real-time monitoring of repayment flows, automated alerts on default risk indicators — enabling structured credit tokenization at African SME scale.
- **Energy pipeline:** tokenized green electricity production from Moroccan and West African renewable installations, with on-chain measurement of effective generation and certified off-takes.

### // INFRASTRUCTURE DOCTRINE

In every emission: **MANSSA Foundation never issues.** Partner SPVs do. MANSSA Foundation provides the oracle, the audit framework, the compliance standards. The anti-capture architecture is structural.

# 08

// SECTION · 08

## HPC KETZAL.

« KETZAL is not a fourth pillar. It is the infrastructure that operates all three. »

### PHASE 1

24 × H100 SXM

### PUE

1.30-1.45

### BUDGET

33 M USD / 36 MO

## Doctrinal position.

HPC KETZAL is housed under MANSSA Labs SARL in Casablanca — Morocco’s Casablanca Finance City zone (CFC 8.75% corporate tax). It is the technical compute backbone that makes all three pillars operational:

- The RWA Pillar requires oracle pricing, IoT aggregation, actuarial modeling, and audit automation.
- The DAO requires economic simulation, fraud detection, and automated reporting.
- LaunchLab requires sovereign GPU compute — no dependence on foreign hyperscalers.

Without KETZAL, MANSSA is a governance architecture without execution infrastructure. With KETZAL, it is a sovereign compute economy.

## Eight operational capabilities.

#	CAPABILITY	PILLAR(S) SERVED
C1	Dynamic commodity pricing	RWA
C2	Actuarial RWA modelling	RWA
C3	Automated on-chain audits	DAO · RWA
C4	Fraud detection and anomaly alerts	DAO · RWA
C5	External data oracles (C5 bridge)	RWA · LaunchLab
C6	Economic and governance simulations	DAO
C7	Automated on-chain reporting	DAO · RWA
C8	IoT integration and aggregation	RWA

# Bicameral oracle architecture.

The oracle architecture is **two-layer by design** — proprietary sovereignty layer plus interoperability bridge:

## // LAYER 1 – PROPRIETARY LAYER (MAINTAINED)

- HSM FIPS 140-2 Level 3 — hardware security module, tamper-evident, air-gap capable.
- 3-of-5 quorum — no single point of failure.
- TEE Intel TDX / AMD SEV-SNP — trusted execution environment for model execution.
- Executes: actuarial pricing models, IoT flow aggregation, commodity price calculations.
- Source of truth for \$aAFRICA and \$gAFRICA emissions.

## // LAYER 2 – BRIDGE LAYER (ADDED)

- Chainlink OCR (Off-Chain Reporting) for on-chain publication.
- Provides interoperability with global DeFi ecosystem: lending protocols, stablecoins, secondary markets.
- Operates in **redundancy mode** — not dependency mode.

### // DOCTRINAL DISTINCTION

The proprietary layer remains autonomous. In the event of bridge unavailability, models execute without interruption. **The bridge publishes what the proprietary layer computes; it does not compute what the bridge receives.**

ORACLE GUARANTEE	IMPLEMENTATION
Proprietary core – sovereign trust environment	HSM + TEE
Source of truth for \$aAFRICA, \$gAFRICA	Layer 1 (proprietary)
Bridge layer – global DeFi interoperability	Chainlink OCR
Redundancy, not dependency	Layer 2 (additive only)

## Hardware roadmap.

PHASE	WINDOW	GPU CONFIGURATION
Phase 0	M1 → M6	POC – partner platform (500 CPU cores, 4 GPU shared)
<b>Phase 1</b>	M6 → M18	<b>24 × H100 SXM</b> – proven, mature procurement pipeline
Phase 2	M18 → M36	32–40 × H200 – anticipated commitment Q3 2026
Phase 3	M36+	32 × B200 incremental as allocations release

Multi-vendor strategy: NVIDIA principal, AMD MI300X second-source, AWS Trainium / Google TPU explored for specific workloads. No single-vendor dependency.

## Energy performance.

**PUE target Phase 1–2: 1.30 to 1.45** – calibrated to Moroccan climate realities and 24/7 HPC operational conditions. This range reflects external HPC engineering study inputs and is operationally realistic.

Morocco’s current 45% renewable grid – with a regulated pathway to 52% by 2030 (IRENA) – provides the energy infrastructure context for KETZAL’s environmental positioning.

## Financing plan – 33 M USD over 36 months.

CATEGORY	AMOUNT	SHARE
CAPEX hardware	<b>20.7 M USD</b>	<b>63%</b>
Datacentre and energy	<b>4.3 M USD</b>	<b>13%</b>
Personnel	<b>5.5 M USD</b>	<b>17%</b>
Software and audits	<b>1.3 M USD</b>	<b>4%</b>
Continental programs	<b>1.2 M USD</b>	<b>4%</b>

Financing mix: 40% tokenized (bonding) · 30% institutional (ADGM Ventures Ltd) · 30% reinvested (oracle revenues, compute services, LaunchLab fees).

09

// SECTION • 09

# LaunchLab accelerator.

« We don't seek  
validators. We seek  
pillars. »

**FSRA CAT. 3C**  
LICENSED

**2 COHORTS**  
PER YEAR

**MODEL**  
EQUITY + TOKEN

## Operational framework.

LaunchLab is operated by **MANSSA Ventures Ltd** under **FSRA Category 3C** — the regulated financial activities license covering advisory, dealing in investments, and asset management under ADGM’s English-common-law framework.

Two cohorts per year. Three thesis verticals:

- **Africa-native DeFi** — DeFi protocols designed from the ground up for African asset structures, liquidity profiles, and regulatory environments.
- **RWA tooling** — infrastructure software for real-world asset tokenization: oracle connectors, compliance engines, SPV management tooling, audit automation.
- **On-chain identity** — sovereign digital identity systems for African populations operating in both formal and informal economies.

## Four concrete contributions.

### // 01 – MUTUALIZED GPU COMPUTE

KETZAL provides compute credits eliminating dependence on foreign hyperscaler pricing. Time-to-production reduced from 18 months to 4–6 months for RWA-adjacent projects.

### // 02 – PRE-INTEGRATED RWA STACK

Oracles (C5), pricing models (C1–C2), audit automation (C3), smart contract templates compliant with the eight anti-ZiG principles.

### // 03 – SOVEREIGN ADGM TRACK

Accelerated incorporation under MANSSA Ventures Ltd umbrella, providing ADGM FSRA Cat. 3C regulatory cover during incubation.

### // 04 – CAPITAL + PROTOCOL + NETWORK

MANSSA investment, full stack access, and a continental mentorship network built through strategic partnerships with existing African Web3 infrastructure.

## Partnership model – competition is not the thesis.

LaunchLab does not aim to displace or compete with existing African Web3 incubators. The strategic position is explicitly **partnership over competition**:

- **AyaHQ** – co-mentorship, deal flow sharing, joint cohort modules.
- **Celo Africa DAO** – KETZAL compute credits in exchange for co-investment opportunities.
- **Lisk Incubation Hub** – RWA tooling co-development, mentorship network.

The logic: MANSSA provides the infrastructure layer that existing incubators cannot. Existing incubators provide the continental network and community relationships that MANSSA is building. The combination is additive.

## KPIs – output quality, not cohort volume.

KPI	DEFINITION
Portfolio follow-on capital	Number of incubated projects raising > 1 M USD in follow-on
Time to market	Projects shipping product within 12 months of cohort
Revenue generation	Number of incubated projects generating revenue
Treasury return	Strategic exits generating DAO treasury return

### // INVESTMENT MODEL

**Equity + token capture.** LaunchLab takes equity in incubated ventures and a protocol-level token position that returns to the DAO treasury on exit.

# 10

// SECTION · 10

## Tokenomics & allocation.

« Every allocation is a commitment. Every commitment is a doctrine. »

**SUPPLY**  
100 M FIXED

**TREASURY**  
35% · CARDINAL

**BURN**  
5% MECHANICAL

## Overview.

METRIC	VALUE
Token	\$MANSSA
Network	ERC-20 · Ethereum mainnet
Total supply	100,000,000 (100 M) – fixed
Supply model	Non-inflationary · deflationary (5% burn on treasury inflows)
Governance derivative	sMANSSA (staked \$MANSSA)

## Allocation breakdown.

CATEGORY	TOKENS	SHARE	LOCK / VESTING
<b>Treasury</b>	35,000,000	35%	Protocol-controlled – DAO allocation
<b>Bonding</b>	25,000,000	25%	Cliff 30d + linear vesting 180d
<b>Team</b>	15,000,000	15%	Cliff 12m + linear vesting 36m
<b>LaunchLab</b>	10,000,000	10%	Cohort-locked – DAO governed
<b>Ecosystem</b>	10,000,000	10%	Milestone-gated – DAO governed
<b>Community</b>	5,000,000	5%	Initial distribution · ambassadors

These allocations are foundational to the Protocol's economic design and cannot be modified by ordinary governance vote.

**CARDINAL**

## Burn mechanics.

**5% of all treasury inflows** are allocated to \$MANSSA combustion — creating a permanent, mechanically-enforced deflationary pressure that increases the scarcity and per-unit treasury backing of outstanding \$MANSSA.

### // BURN REVISION · RATIONALE

This rate replaces a previously communicated higher burn allocation. The 15 percentage points freed are redirected to operational treasury (7%), bear-market reserve (5%), and POL reinforcement (3%) — a rebalancing that **strengthens protocol resilience over long-horizon token scarcity**.

## Protocol-Owned Liquidity (POL).

**15% of treasury inflows** are permanently allocated to Protocol-Owned Liquidity. POL is never withdrawn. It grows continuously as the treasury grows.

The effect: MANSSA's liquidity depth is proportional to its treasury size — the larger the protocol, the deeper its market, the more resistant to manipulation. This eliminates the common DAO failure mode of rented liquidity.

## Bear-market reserve.

**5% of treasury inflows** are held in stablecoins and ETH as a bear-market cushion. Purpose: absorb a market downturn of 24–36 months without forced liquidation of strategic assets.

The KETZAL CAPEX timeline and the \$aAFRICA pilot timeline both span approximately 36 months. The bear-market reserve ensures that adverse market conditions during this window do not force protocol contraction at the wrong moment in the cycle.

# 11

// SECTION · 11

## Treasury trajectory.

« An honest trajectory is  
more credible than a  
spectacular target. »

**P1**  
100 M · T+12

**P5**  
10 BN · 2031-2032

**3 SCENARIOS**  
HIGH · CENTRAL · LOW

## Cardinal target.

**10 billion USD sovereign protocol treasury** — non-negotiable. This is not a theoretical scenario. It is the structural outcome of operating the most comprehensive sovereign-infrastructure RWA protocol on a continent whose tokenizable asset base exceeds 1 trillion USD by conservative estimate (BCG Tokenization Report 2024).

## Tiered trajectory.

TIER	TARGET	CENTRAL HORIZON	HIGH	LOW
P1	<b>100 M USD</b>	T+12 months	T+9	T+18
P2	<b>500 M USD</b>	T+24 months	T+18	T+36
P3	<b>1 Bn USD</b>	T+36 months	T+24	T+48
P4	<b>3 Bn USD</b>	T+48 months	T+36	T+60
<b>P5</b>	<b>10 Bn USD</b> <b>CARDINAL</b>	<b>T+72 (2031–2032)</b>	<b>T+48 (2029–2030)</b>	<b>T+96 (2033–2034)</b>

*T = Token Generation Event date (indicative H1 2027). The "2029 horizon" previously cited corresponds to the high scenario — achievable under optimal execution and favourable market conditions.*

## Phase 1 financial model – three scenarios.

SCENARIO	RWA AUM	GROSS REVENUES	ACQUISITION COSTS	NET MARGIN
High	<b>75 M USD</b>	<b>1.1 M USD</b>	<b>2.5 M USD</b>	<b>(1.4) M USD</b>
Median	<b>40 M USD</b>	<b>0.6 M USD</b>	<b>2.0 M USD</b>	<b>(1.4) M USD</b>
Low	<b>20 M USD</b>	<b>0.3 M USD</b>	<b>1.5 M USD</b>	<b>(1.2) M USD</b>

Phase 1 negative net margin is structurally consistent with a protocol building permanent infrastructure, not extracting short-term yield.

## Why 10 billion USD is credible.

Africa’s **tokenizable RWA base** — agricultural commodities, gold, real estate, structured receivables, green energy — is estimated at **4–7 trillion USD** in underlying asset value by conservative institutional research (BCG, RWA.xyz, Chainalysis 2024–2025).

MANSSA’s target of 10 Bn USD represents **0.1–0.25% penetration** of this addressable base. The Protocol does not need to capture the continent. It needs to be the sovereign infrastructure layer that the continent’s asset managers, governments, and institutional investors choose as their preferred tokenization standard.

<p><b>\$4–7T</b></p> <p>ADDRESSABLE RWA BASE</p> <p>Africa tokenizable assets (BCG 2024)</p>	<p><b>0.15%</b></p> <p>PENETRATION AT P5</p> <p>\$10Bn = 0.1–0.25% of TAM</p>	<p><b>\$30B</b></p> <p>GLOBAL RWA MARKET</p> <p>200–300% CAGR (RWA.xyz May 2026)</p>
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At P5 = 10 Bn USD, MANSSA enters the institutional conversation alongside established reserve protocols. Below that threshold, it remains a significant but regional instrument. **The target is the minimum threshold for sovereign relevance — not a ceiling.**

**// THREE-SCENARIO DOCTRINE**

*An honest trajectory is more credible than a spectacular target. The transparency of this three-scenario presentation is itself a doctrine application.*



# 12

// SECTION · 12

## Sovereign architecture.

« Three entities. Three  
jurisdictions.  
Operationally distinct.  
Structurally  
desolidarized. »

**ADGM**  
FOUNDATION + VENTURES

**CFC**  
LABS · 8.75%

**6 LEVELS**  
DESOLIDARIZATION

## Three entities overview.

ENTITY	JURISDICTION	REGIME	FUNCTION
<b>MANSSA Foundation</b>	Abu Dhabi	ADGM · DLT Foundation	Protocol governance · IP holder · DAO operator. Non-profit, mission-aligned.
<b>MANSSA Ventures Ltd</b>	Abu Dhabi	ADGM · FSRA Cat. 3C	Regulated financial activities · LaunchLab · investor-facing vehicles.
<b>MANSSA Labs SARL</b>	Casablanca	CFC 8.75%	Technical operations · HPC KETZAL · continental engineering hub.

## Operational desolidarization – six levels.

- **Financial** — Distinct bank accounts. No commingling of funds.
- **Governance** — Distinct boards, at least two of three directors entity-specific per entity.
- **Contractual** — Formal arm's-length inter-entity contracts for any service flow, license, IP, or financing transfer.
- **Accounting** — Distinct analytical accounting, audited annually. No consolidated reporting that obscures entity-level performance.
- **Operational** — Physically distinct premises: Foundation and Ventures Ltd in Abu Dhabi; Labs SARL in Casablanca.
- **Human Resources** — Distinct HR policies, salary scales, bonus policies, token vesting per entity.

Distinct brand emails: [foundation@manssa.io](mailto:foundation@manssa.io) · [ventures@manssa.io](mailto:ventures@manssa.io) · [labs@manssa.io](mailto:labs@manssa.io)

## Why this architecture.

### // ADGM FOUNDATION (DLT REGIME)

The Abu Dhabi Global Market's DLT Foundation regime provides the only mature worldwide legal vehicle offering: enforceable legal personality for a Web3 protocol; holder-community as beneficiary — legally enforceable, not merely aspirational; IP holding capacity; institutional investor accessibility recognized by sovereign wealth funds globally.

### // ADGM VENTURES LTD (FSRA CAT. 3C)

FSRA Category 3C enables: advisory and dealing in investments (legally required for LaunchLab operations); asset management activities (required for RWA SPV management and oversight); English-common-law framework recognized across 90%+ of global institutional capital.

### // CASABLANCA LABS SARL (CFC 8.75%)

CFC provides: 8.75% corporate tax on internationally-oriented activities — the lowest-cost regulated regime for technology operations in Africa; 100+ bilateral tax treaties with major economies; physical presence on African soil — essential for the sovereignty doctrine; access to Morocco's technical talent pool for HPC KETZAL engineering.

### // MOROCCAN IMPLANTATION

Moroccan implantation via CFC is secured by formal legal mandate from a CFC-specialized law firm. A conditional fallback plan is pre-instructed — activated only upon proven regulatory incompatibility, by constitutional amendment.

# 13

// SECTION · 13

## Brand doctrine.

« Not money. Not a promise. Eight rules. No exceptions. »

**8 PRINCIPLES**  
ANTI-ZIG

**MANSSA®**  
TWO S – REGISTERED

**ZIG**  
INVERTED · 8 TIMES

## What is anti-ZiG?

The eight anti-ZiG principles are the operational translation of the Protocol’s heritage commitment into governance rules. They are named in reference to the most prominent case study in recent memory of a sovereign digital currency that failed through political pricing, opacity, and the absence of structural constraints.

Each MANSSA principle is the specific inversion of that failure mode.

## The eight principles.

These principles are doctrinal — they cannot be modified by ordinary governance vote.

#	PRINCIPLE	OPERATIONAL MEANING
01	<b>Not money</b>	\$MANSSA is asset-backed reserve. Never a payment rail.
02	<b>Issuer ≠ regulator</b>	Structural separation enforced. Independent oversight committee validates emissions.
03	<b>Tier-1 audits</b>	Quarterly audits by KPMG, BDO, PwC, Deloitte, EY, or equivalent.
04	<b>130–150% overcollat.</b>	On-chain verifiable margin between underlying assets and tokens issued.
05	<b>Physical redemption</b>	Token holders retain the right to withdraw the underlying.
06	<b>Auto-arbitrage</b>	Smart contract stabilization mechanisms, not manual intervention.
07	<b>Reserves on-chain</b>	Daily public-read updates. Treasury wallet addresses publicly disclosed.
08	<b>Infra ≠ issuer</b>	MANSSA Foundation never issues directly. Token emissions operated by partner SPVs.

## Brand discipline.

« MANSSA® ≠ MANSA · Differentiated since 2026.  
Two S. Registered. »

The MANSSA® brand is spelled with **two S** — this is a registered trademark, legally filed and rigorously enforced. The distinction is not cosmetic: it marks the transformation from a historical Manding royal title to a protocol identity.

- Brand deposits: OMPI/Madrid, USPTO, EUIPO, OAPI, ARIPO.
- Sub-brands: \$aAFRICA, \$gAFRICA, sMANSSA, LaunchLab RWA-Africa — each exactly orthographed, each legally filed.
- Disambiguation: MANSSA® is unaffiliated with any other entity using a similar name. Disambiguation published at [manssa.io/about](https://manssa.io/about).

## Sovereign verbiage.

The following phrases are opposable doctrinal commitments — not marketing copy:

// OPPOSABLE · TO TGE

Sovereign by doctrine. Tokenized by design.

// FIRST-HOLDER · PERPETUAL

Holders come first, always.

// ANTI-ZIG · 8/8

All eight anti-ZiG principles — simultaneously and without exception. A single violation invalidates the entire emission.

# 14

// SECTION · 14

## Roadmap & TGE.

« *The Protocol builds before it launches.* »

### **TGE**

INDICATIVE H1 2027

### **MILESTONES**

6 PRE-CONDITIONS

### **AUDITS**

DUAL-CABINET REQUIRED

## Pre-TGE milestones – six opposable pre-conditions.

- Constitutional revision corpus signed and filed.
- External engineering, legal, and market-maker mandates received.
- Smart-contract dual audits completed (zero high/critical – two tier-1 cabinets).
- Security Council operational – 7 independent mandataries legally mandated.
- Brand trademark deposits filed: OMPI/Madrid, USPTO, EUIPO, OAPI, ARIPO.
- Bicameral oracle (HSM + TEE + Chainlink OCR) live in production.

// TGE · INDICATIVE H1 2027

TGE indicative H1 2027 ± 3 months. Subject to audit cycle and operational readiness – opposable to protocol, not market.

## Phase roadmap.

PHASE	WINDOW	KEY MILESTONES
<b>Pre-TGE</b>	T-12 → TGE	Specs v1.0 · Smart contracts · Dual audits · Council 7 · Oracle production · Bug bounty
<b>TGE + Phase 1</b>	TGE → T+12	Bonding live · \$aAFRICA pilot · KETZAL Ph.1 (24×H100) · DAO operational · P1 100M USD
<b>Phase 2</b>	T+12 → T+36	\$gAFRICA · KETZAL Ph.2 (32-40×H200) · OCR bridge production · LaunchLab Cohorts 2-4 · P3 1Bn USD
<b>Phase 3</b>	T+36 → T+72	KETZAL Ph.3 (32×B200) · Continental RWA expansion · P5 10Bn USD central 2031-2032

# 15

// SECTION · 15

## Canonical documents.

*The canonical reference  
corpus of MANSSA® –  
Africa's Reserve  
Protocol.*

**WHITEPAPER**  
VOL. I

**LITEPAPER**  
VOL. II

**PITCH DECK**  
VOL. III

## MANSSA® canonical documents.

- **MANSSA® Whitepaper v4** — This document. VOL. I primary (51 pages).
- **MANSSA® Litepaper v4** — Concise investor executive summary. VOL. II (8 pages).
- **HPC KETZAL Founding Document corr.2** — Full technical specifications for the compute infrastructure.
- **DOC-B RWA Pillar v2** — Architecture méthodologique et fonctionnelle du Pilier RWA.
- **ADGM DLT Foundations Regulations 2023** — Legal regime reference for the DLT Foundation.
- **FSRA Crypto Asset Activities Regulations** — Regulatory framework for Ventures Ltd.
- **Casablanca Finance City Statute and Tax Framework** — CFC 8.75% corporate tax reference.

## External references cited in this document.

- USGS 2025 — Mineral commodity summaries, strategic mineral production data.
- BCG Tokenization Report 2024 — Real-world asset tokenization market sizing.
- RWA.xyz Dashboard — Live tokenized RWA market data (accessed May 2026).
- Chainalysis Africa Report 2025 — Crypto adoption and DeFi usage in Africa.
- IRENA 2030 Renewable Energy Projections — Morocco grid evolution data.
- IEA Digital Energy Report 2024 — Africa data center capacity baseline.
- IFC Infrastructure Note 2024 — Sub-Saharan Africa tech infrastructure investment.

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All data accessed and cited at time of publication (May 2026). External sources are provided for informational context. MANSSA® makes no representation as to the ongoing accuracy of third-party data.

# External sources.

## // A1 – STRATEGIC MINERAL DATA (USGS 2025)

Africa's share of world production for key strategic minerals (USGS Mineral Commodity Summaries 2025):

- Cobalt: ~70% of world mine production (DRC primary).
- Manganese: ~40% of world mine production.
- Platinum Group Metals: ~75% of world mine production (South Africa primary).
- Gold: ~20% of world mine production.
- Lithium: emerging production base (Zimbabwe, DRC, Ghana).

## // A2 – TOKENIZED RWA MARKET CONTEXT (BCG 2024 / RWA.XYZ MAY 2026)

- Global tokenized RWA market: ~30 Bn USD in early 2026 (RWA.xyz dashboard, accessed May 2026).
- Annual growth rate: 200–300% CAGR (BCG Tokenization Report 2024).
- African-origin tokenized assets with African-controlled protocols: estimated <5% of total market.

## // A3 – COMPUTE CAPACITY ASYMMETRY (IEA / USGS 2025)

- Africa's share of global data center capacity: <1% (IEA Digital Energy Report 2024).
- Morocco renewable energy grid: 45% in 2024, target 52% by 2030 (IRENA).
- Sub-Saharan Africa tech infrastructure investment: \$12 Bn projected 2024–2028 (IFC infrastructure note).

## // A4 – AFRICAN DEFI ADOPTION (CHAINALYSIS 2025)

- Africa ranks among top 3 regions globally for P2P crypto adoption (Chainalysis Report 2025).
- African stablecoin usage for cross-border remittance: growing at 180% YoY in West Africa.
- West Africa (ECOWAS zone) accounts for >40% of African on-chain transaction volume.

*Whitepaper v4 – Updated May 2026 – END OF DOCUMENT*

*LIV-MMS-2026-009 v4 – MANSSA® – Africa's Reserve Protocol*

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// CLOSING

# Engage with MANSSA® .

« Pioneer. Sovereign.  
First-Holder. Africa's  
reserve protocol. »

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