TECHNICAL WHITEPAPER · v1.0 · MAY 2026

CryptoZyra: An AI-Powered Layer 1 Blockchain

A hybrid DAG architecture with native on-chain AI, quantum-resistant cryptography, sub-second finality, and a complete crypto-commerce stack — engineered for the next decade of global digital value.

Total Supply	10,000,000,000 ZYRA
Consensus	Hybrid DAG + PoS
Finality	< 1 second
Average Fee	~ $0.0001

1. Abstract

CryptoZyra (ZYRA) is a Layer 1 blockchain that combines a hybrid Directed Acyclic Graph (DAG) ledger with delegated Proof-of-Stake to deliver sub-second finality, near-zero fees, and horizontal scalability beyond 100,000 transactions per second. ZYRA embeds a native on-chain inference layer enabling smart contracts to call optimized AI models, and uses post-quantum signature schemes to remain secure against both classical and quantum adversaries.

Around the protocol, CryptoZyra ships a complete crypto-commerce stack — wallet, payments, marketplace, and merchant tools — turning $ZYRA from a passive asset into transactional money for the open internet.

2. Introduction

Existing Layer 1 networks force a trade-off between speed, decentralization, and cost. Bitcoin is secure but slow. Ethereum is expressive but expensive. Newer chains optimize throughput at the expense of validator diversity or upgrade neutrality. Meanwhile, two generational shifts — generative AI and practical quantum computing — are arriving faster than blockchains are adapting.

CryptoZyra is designed from first principles to absorb both shifts: an architecture where AI is a first-class on-chain primitive, and where today's signatures will not need to be migrated tomorrow.

3. Vision & Mission

Our mission is to make crypto invisible: instant, cheap, secure payments that anyone in the world can use without thinking about chains, gas, or bridges. Our vision is a single, AI-native settlement layer for global digital value.

4. Architecture

ZYRA is structured in four layers:

Network Layer — libp2p-based peer mesh with low-latency gossip and bandwidth-aware peer scoring.

Ledger Layer — hybrid DAG of transaction blocks with periodic checkpoint anchoring for finality.

Execution Layer — EVM-equivalent virtual machine plus a parallel WASM runtime for high-throughput contracts.

AI Layer — on-chain inference precompiles backed by a decentralized model registry (see §6).

5. Consensus: Hybrid DAG + PoS

Validators are elected by stake-weighted lottery and produce DAG vertices in parallel. A virtual voting protocol orders vertices deterministically, producing total ordering without leader-based bottlenecks.

Checkpoints are anchored every ~400 ms, giving economic finality below one second under normal conditions.

Validators must stake at least 250,000 ZYRA. Slashing applies to double-signing and extended liveness failures. Delegators share rewards minus a validator-set commission.

6. On-Chain AI Layer

Smart contracts can invoke registered models through deterministic inference precompiles. Each model is content-addressed, versioned, and signed by its publisher. Validators run a verifiable execution path for small models; larger models use an optimistic verification game with fraud proofs.

Use cases include on-chain credit scoring, dynamic NFT generation, fraud detection in payments, and AI agents that custody and transact ZYRA autonomously.

7. Quantum-Resistant Security

Accounts use a dual-signature scheme: ECDSA secp256k1 for compatibility and Dilithium-3 (NIST PQC standard) for quantum resistance. Both signatures are validated at consensus, and a future fork can deprecate ECDSA without forcing user migration. Hash-based commitments use SHA-3 throughout.

8. Ecosystem & Commerce Stack

ZYRA Wallet — non-custodial mobile and browser wallet with social recovery.

ZYRA Pay — merchant SDK and POS app: instant settlement in ZYRA, optional fiat conversion.

ZYRA Marketplace — on-chain marketplace for goods, services, and tokenized assets.

ZYRA Bridge — trust-minimized bridges to Ethereum, BNB Chain, Solana, and Bitcoin via threshold signatures.

9. Tokenomics

Total supply: **10,000,000,000 ZYRA**, fixed at genesis. Allocation:

Allocation	Share	Vesting
Presale	30%	20% TGE, 12-month linear
Ecosystem & Rewards	25%	48-month emission
Staking Rewards	15%	Released by epoch
Team	12%	12-month cliff, 36-month linear
Treasury	10%	Governance-controlled

Liquidity & Listings	5%	Unlocked at TGE
Advisors & Partners	3%	6-month cliff, 24-month linear

A deflationary burn of 25% of all network fees permanently reduces supply.

10. Presale Structure

Ten sequential stages from **$0.005** to **$0.05**. Each stage transition raises the price. Accepted methods: ETH, BNB, USDT, USDC, card, and WalletConnect. Allocations vest linearly over 12 months after token generation event (TGE), with 20% unlocked at TGE.

11. Governance

ZYRA holders vote on protocol parameters, treasury disbursements, and AI model approvals via on-chain proposals. Voting power is stake-weighted with a quadratic option for ecosystem grants to limit whale dominance.

12. Roadmap

Phase 1 — Foundation: Presale launch, brand, community.

Phase 2 — Testnet: Public testnet, bug bounty, Tier-1 audits.

Phase 3 — Mainnet: Mainnet launch, staking go-live, wallet & bridge release.

Phase 4 — Expansion: Tier-1 exchange listings, ZYRA Pay, marketplace, AI model registry.

13. Team & Advisors

CryptoZyra is built by a distributed team of cryptographers, distributed-systems engineers, and fintech operators with backgrounds across major exchanges, Layer 1 protocols, and AI research labs. Full team disclosures are published in Phase 2 alongside the audit reports.

14. Risk Factors

Cryptocurrency investments involve substantial risk including total loss of capital. Key risks include smart-contract vulnerabilities, regulatory change, market volatility, custodial loss, and execution risk against the published roadmap.

15. Legal Disclaimer

This whitepaper is for informational purposes only and does not constitute an offer or solicitation to sell securities. $ZYRA is a utility token intended to power the CryptoZyra network and confers no equity, dividend, or governance rights in any company. Participation may be restricted in certain

jurisdictions.