VECT • AI

Technical Paper

Decentralized AI Intelligence Protocol

Version 1.0 | October 2025
Vectorium Ecosystem

Abstract

VECT • AI represents a paradigm shift in decentralized artificial intelligence, combining blockchain technology with machine learning infrastructure to create a verifiable, ethical, and sustainable intelligence network. This technical paper outlines the architecture, protocols, and implementation strategies that power the VECT • AI ecosystem within the broader Vectorium Innovation Network.

1. System Architecture

1.1 Core Components

The VECT • AI system comprises three primary components:

• IntelliJAM Protocol: Decentralized data streaming and AI model coordination
• IntelliGEM Framework: Token-incentivized intelligence validation
• Vectorium Network Layer: Cross-chain interoperability and settlement

1.2 Blockchain Infrastructure

Platform: Solana (SPL Token Standard)
Smart Contract: J7gr5uPExeRmTc6GdVNyXj4zmYdXmYLYFC5TkkDngm4x
Consensus: Proof of History (PoH) + Proof of Stake (PoS)
Transaction Speed: ~65,000 TPS
Block Time: ~400ms

2. Token Economics & Utility

Token Symbol: VECT.AI
Total Supply: 100,000,000 tokens
Decimals: 9

2.1 Utility Functions

1. Governance: Token holders vote on protocol upgrades
2. Staking: Earn rewards for securing the network
3. Access: Premium AI model access and API calls
4. Data Marketplace: Purchase training datasets
5. Compute Credits: Pay for distributed AI computation

3. Technical Implementation

3.1 Smart Contract Architecture

Language: Rust (Solana Program)
Framework: Anchor v0.28+
Security: Audited by [To be announced]

Key Functions:
• mint(): Token minting (restricted to authorized addresses)
• transfer(): Standard SPL token transfer
• stake(): Lock tokens for governance and rewards
• unstake(): Unlock tokens after vesting period
• govern(): Submit and vote on proposals

3.2 AI Integration Layer

The AI layer connects on-chain token activity with off-chain AI computation:

• Oracle Network: Chainlink-compatible data feeds
• Compute Nodes: Distributed inference infrastructure
• IPFS Storage: Decentralized model and dataset hosting
• API Gateway: RESTful and GraphQL endpoints

4. Security Considerations

Security Measures:

• Multi-signature treasury management
• Time-locked admin functions
• Rate limiting on critical operations
• Formal verification of core contracts
• Bug bounty program (post-launch)

5. Development Roadmap

5.1 Phase 1: Q4 2025 (Foundation)

• Token deployment on Solana
• Private sale completion
• Core smart contract audit
• Community building

5.2 Phase 2: Q1 2026 (Launch)

• Public token listing (DEX)
• Staking mechanism activation
• Governance portal launch
• Initial liquidity provision

5.3 Phase 3: Q2 2026 (Expansion)

• IntelliJAM protocol integration
• IntelliGEM framework deployment
• AI compute marketplace beta
• Cross-chain bridge (Ethereum, BSC)

6. Regulatory Compliance

Jurisdiction: Estonia (EU)
Issuing Entity: BenediXit OÜ
Compliance Framework: EU DLT Regulation

Note: VECT • AI tokens are utility tokens intended for ecosystem participation and do not represent securities, equity, or investment contracts. Availability is restricted in certain jurisdictions including the United States and Canada.

7. References & Resources

[1] Solana Architecture: https://docs.solana.com
[2] SPL Token Standard: https://spl.solana.com/token
[3] Vectorium Ecosystem: https://vectorium.co
[4] VECT • AI Department: https://test.vectorium.co