Zirodelta

A protocol that earns before you deposit.

Version 4.3 — March 2026

What Zirodelta Is

Zirodelta is an execution business — not a DeFi app.

Most yield protocols build a platform, attract users, and take fees on their activity. Revenue depends on adoption. Without users, there is no product.

Zirodelta's engine generates revenue on its own. It captures funding rate spreads across 19+ exchanges, 24/7, autonomously. The yield exists before any user deposits a single token. The vault doesn't create the revenue — it distributes revenue that already exists.

$100M+ in funding rates flow between crypto exchanges every day. Our engine collects the spread.

Mission

Eliminate hype-driven finance. Build systems where value comes from execution, discipline, and measurable performance — not emissions, narratives, or speculation.

1. The Problem

Perpetual futures are the largest market in crypto. Every day, over $100 million flows between long and short traders through funding rate payments — real capital, transferred between real participants, driven by real leverage demand.

Funding rates are the most consistent, structurally recurring yield source in digital asset markets. Yet almost none of this value reaches ordinary token holders.

Four barriers prevent access:

Operational Complexity. Capturing funding rate yield requires simultaneously hedging long and short positions across multiple exchanges, monitoring rates around the clock, rebalancing margin in real time, and avoiding liquidation during volatile periods. This demands infrastructure, capital efficiency, and continuous execution that only professional desks can sustain.

Fragmented Markets. No existing protocol offers a unified interface for discovering, executing, and managing funding rate strategies across both centralized and decentralized venues at scale. The best deltas exist between exchanges, not within them.

Speed. Funding rate deltas between exchanges shift every 8 hours. By the time a human identifies an opportunity, evaluates risk, and executes across two exchanges — it's gone. The market rewards agents that operate at machine speed, 24/7.

Capital Access. Even those who understand the strategy lack the capital or infrastructure to deploy it at scale across 19+ exchanges simultaneously.

The result: funding rate yield — one of the few genuinely sustainable cash flows in crypto — is captured almost exclusively by exchanges and institutional trading desks. Everyone else is left with leverage, speculation, and inflationary token emissions disguised as yield.

2. The Market

Live Data from Beta-X1 Engine

The following numbers are computed from Zirodelta's own capacity scanner — live data, not estimates.

Snapshot: February 23, 2026

Funding Rate Market (across 19+ monitored exchanges)

Metric	Value
Total open interest monitored	$150B+
Funding payments flowing per 8h period	$19M+
Funding payments flowing daily	$57M+
Funding payments flowing annually	$20.8B+

Engine supports 36 exchange adapters — Binance, OKX, Gate, Hyperliquid, Bybit, Deribit, dYdX, BitMEX, GRVT, KuCoin, BingX, and more. Active monitoring covers 19+ exchanges with live API connections.

Capturable Opportunities (funding deltas >3% annual)

Metric	Value
Active delta pairs	93
Total hedgeable capacity	$3M
Daily capturable yield	$4,800
Annual capturable yield	$1.75M
Average delta (annualized)	163%

These numbers update continuously. Live data is published on the Zirodelta Transparency Dashboard.

Structural Characteristics

- Funding rates have been **positive over 92% of the time** across major exchanges, reflecting persistent structural bias in leverage demand.
- Median rates cluster around **~0.01% per 8-hour period** — individually modest, but compounding to meaningful annual yields at scale.
- Rates persist across all market regimes. Bull markets generate positive funding as longs dominate. Bear markets generate negative funding as shorts accumulate. Volatility amplifies the spreads.
- Decentralized perpetual platforms are maturing rapidly, expanding the addressable opportunity set beyond centralized venues.

3. The Solution

Zirodelta is an execution business that trades for itself. It captures funding rate yield across exchanges and distributes value to $ZDLT holders — through direct yield for active participants and supply reduction for passive holders.

The engine operates autonomously. Revenue exists before any user deposits. The vault is distribution infrastructure — not the source of yield. The only input is capital. The output is yield.

Core Mechanics

Scan. AI agents monitor funding rates across 19+ centralized and decentralized exchanges in real time, covering thousands of live opportunities.

Identify. Detect cross-exchange funding rate deltas on the same asset — for example, when Hyperliquid charges 11% annualized and KuCoin pays -32%. That's a 43% annual spread on a single pair.

Execute. Open offsetting long and short positions across venues to establish a market-neutral position with zero directional exposure. Short the high-rate exchange, long the low-rate exchange, collect the spread.

Capture. Collect the funding rate differential as yield. The position profits from the delta between exchanges, regardless of which direction the underlying asset moves.

Distribute. Protocol revenue splits transparently: 60% to vault depositors, 25% to protocol growth, 15% to buyback & burn. All on-chain. All verifiable.

Execution Engine

The trading engine (Beta-X1) was built by the person who popularized funding rate farming in Indonesia, invented the jumping method for 10,000%+ APR, and pioneered the cross-exchange delta approach. It runs on dedicated infrastructure:

- **Temporal workflow orchestration** — capacity scanning, allocation, execution, rebalancing, and auto-deleverage as durable, fault-tolerant workflows
- **Cross-exchange delta computation** — groups assets by base currency across exchanges, ranks by `delta_score = delta_ann × max_hedge_capacity`
- **36 exchange adapters** — Binance, OKX, Gate, Hyperliquid, Bybit, Deribit, dYdX, BitMEX, GRVT, KuCoin, BingX, and 19+ exchanges with live connections
- **AI agent layer** — autonomous decision-making on top of the deterministic engine. The agent interprets anomalies, adjusts for market regime, learns from outcomes, and factors in qualitative data (exchange reliability, news, on-chain signals) that pure algorithms miss.
- **ClickHouse analytics** — real-time storage and analysis of 1.4M+ funding rate records, capacity snapshots, and allocation history
- **Hedged-only execution** — every position is a hedge pair (short leg + long leg). Single-leg exposure is architecturally impossible.

Quantitative Methods

- **Cross-Exchange Delta Ranking** — groups assets by base currency across all connected exchanges, computes the funding rate spread (delta) for each pair, and ranks by `delta_score`. The product is the spread between exchanges, not individual rates.
- **Capacity-Aware Position Sizing** — each opportunity is scored by open interest depth, 24-hour volume, and bid-ask spread. Maximum position size is constrained by OI fraction (1%) and volume fraction (2%), with

spread penalty reducing sizing when orderbook spreads exceed 5 bps.

- **Multi-Constraint Allocation** — greedy knapsack allocation with simultaneous constraints: max 15% of capital per pair, max 25% per symbol across exchanges, max 20 positions per exchange, platform-wide capacity deduction to prevent self-crowding.
- **Hedged-Only Execution** — architecturally enforced. Every position is a hedge pair. If one leg fails, the other is emergency-closed within seconds.
- **8-Hour Settlement Alignment** — all position opens, closes, and rebalances are synchronized with funding settlement cycles (00:00, 08:00, 16:00 UTC) to maximize funding capture and minimize unnecessary unwinding costs.

Design Principles

Self-sustaining. The protocol generates its own revenue from market structure. No dependency on user activity, token emissions, or speculative inflows.

Market-neutral. Every position is hedged. Profit derives from the funding rate spread between venues, not from directional price exposure.

Regime-independent. Funding rates exist in every market condition — bull, bear, and sideways. Volatility amplifies spreads. As long as traders use leverage, funding payments flow.

Transparent. All farming P&L is published on-chain. Every position, every trade, every burn — verifiable on the transparency dashboard.

4. Revenue Model

Zirodelta generates revenue from four sources. None require selling tokens. None depend on new users. All feed the same treasury — and each one accelerates the others.

Revenue Source 1: Protocol Trading Profits (Class C)

The protocol trades its own capital. 100% of profits are retained by the treasury. This is the first revenue source to go live and the foundation of the track record.

Alpha phase results: - **11.8% return in 12 days** — live trading across multiple pairs - **2.85% daily PnL on FLOWUSDT** — captured January 3, 2026, across Bybit and KuCoin

Revenue Source 2: Vault Fees (Class A)

$ZDLT holders deposit into the vault. The engine trades their borrowed USDT and charges 40% of gross returns:

Stream	% of Class A Gross	Purpose
Vault depositor yield	60%	Returns to $ZDLT vault depositors
Protocol growth	25%	Lending pool expansion, infrastructure, operations
Buyback & burn	15%	Buy $ZDLT from open market, burn permanently

The 60/25/15 split applies **only to Class A (vault) capital.** See Section 8 for how capital classes work.

Revenue Source 3: Institutional Performance Fees (Class B)

Institutional partners deploy USDT directly into the engine under managed account terms. No $ZDLT required. The protocol charges a negotiated performance fee (20-30% of gross profits). Terms are per-partner — not one-size-fits-all.

This structure is standard in traditional finance: one engine, multiple capital allocators, each with their own fee arrangement.

Revenue Source 4: Agent-Hire Revenue (OpenAgentMarket)

The farming engine is exposed as a hireable AI agent on OpenAgentMarket. Other AI agents pay per-request via x402 micropayments to access Zirodelta's scanning, analysis, and execution capabilities.

Request	Price	What they get
Scan deltas	$0.02	Top 20 opportunities across 19+ exchanges
Funding history	$0.01	Historical rates for any symbol/exchange
Portfolio status	$0.01	Current positions, P&L, risk metrics
Allocate (dry_run)	$0.05	Optimal capital allocation plan
Rebalance check	$0.03	Funding flip detection + rotation plan
Execute hedge	$0.10 + 0.5% of position	Full execution through Beta-X1
Performance fee	10% of realized profit	Charged on position close

Agent-hire revenue flows into the protocol treasury and compounds into Class C trading capital.

Protocol Treasury

All four revenue sources feed the treasury:

Source	What the protocol keeps
Class C trading profits	100%
Class A vault fees	25% (growth) + 15% (buyback)
Class B performance fees	20-30% of gross
Agent-hire fees	100%

The treasury funds operations, expands infrastructure, compounds into Class C capital, and executes the $ZDLT buyback & burn program. The 15% buyback allocation from Class A is automated and non-discretionary — it goes directly to buying and burning $ZDLT on the open market.

Capital Growth Flywheel

```
Protocol capital (Class C) proves the engine works
  → Track record attracts institutional capital (Class
B)
    → Institutional scale proves capacity
      → Vault opens for $ZDLT holders (Class A)
        → Vault deposits provide $ZDLT collateral
          → Collateral enables USDT borrowing →
deploys to engine
            → Farming generates yield → 60% to
depositors, 15% to buyback
              → Buyback reduces supply → Price
pressure
                → Agent-hire revenue compounds into
Class C
                  → Growing treasury → More capacity →
Cycle accelerates
```

The flywheel is powered by real trading activity and real yield — not by token emissions or new user speculation.

5. $ZDLT

Contract Address: `4PX31xRA1BaAyb2Js45ZKYp92VGWGp47yWeVs5CGVKbf` **Network:** Solana **Supply:** Fixed. No emissions. No inflation. **Launch:** Fair launch. No presale. No VC allocation. No treasury dump.

Two Paths to Value

Active holders — deposit into the Zirodelta Vault.

Deposit $ZDLT as collateral → deposit enters the epoch buffer → at the next 8-hour epoch boundary, the protocol borrows USDT against it from the Zirodelta Lending Pool → USDT deploys to Beta-X1 farming → depositors earn 60% of farming revenue pro-rata per epoch.

Your $ZDLT is never sold. It sits as collateral, earning yield from the farming engine it fuels. Withdrawals process at epoch boundaries (≤8-24 hours), aligned with the engine's 8-hour funding settlement cycle.

Passive holders — hold $ZDLT.

15% of all protocol revenue buys $ZDLT from the open market and burns it permanently. Supply decreases. Your share of total supply increases. Zero action required.

Deflation Mechanics

$ZDLT has a fixed supply and zero emissions. Two forces continuously reduce circulating supply:

1. **Buyback & burn** — 15% of all protocol revenue buys and burns $ZDLT. On-chain, verifiable, automatic.
2. **Vault deposits** — $ZDLT collateralized in the vault is removed from active circulation while deposited.

6. The Zirodelta Vault (Class A)

The Vault is the mechanism connecting $ZDLT holders to the farming engine's yield. It represents **Class A** in the capital architecture — the public-facing product for retail token holders. (See Section 8 for how Class A relates to other capital classes.) It is a Solana smart contract that accepts $ZDLT deposits, collateralizes them, and routes borrowed USDT to the trading engine. The vault operates on **8-hour epochs** — synchronized with funding rate settlement cycles across exchanges — so every dollar in the engine maps cleanly to a specific epoch's collateral pool.

Epoch-Based Architecture

The vault runs on discrete 8-hour epochs aligned with global funding settlement times (00:00, 08:00, 16:00 UTC). This is not an arbitrary design choice — it mirrors how funding rates actually settle across exchanges.

```
Epoch N (08:00 - 16:00 UTC)
├── Deposits received during epoch N → queued in deposit buffer
├── Capital from epoch N-1 depositors is active in the engine
├── Funding settlements collected at 16:00 → yield attributed to epoch N participants
└── At epoch boundary (16:00):
    ├── New deposits (epoch N buffer) activate → collateral enters lending pool
    ├── USDT borrowed against new collateral → deploys to engine
    ├── Epoch N yield finalized → distributed pro-rata to active depositors
    └── Withdrawal requests queued during epoch N begin processing
```

Why epochs matter: Without epochs, deposits and withdrawals happen continuously, and capital in the engine becomes impossible to attribute. With 8-hour epochs, every USDT deployed traces back to a specific epoch's collateral pool. Clean accounting. No ambiguity. No gaming deposit/withdrawal timing to capture yield without risk.

How It Works

```
1. Holder deposits $ZDLT into Zirodelta Vault
       ↓
2. Deposit enters the epoch buffer (pending until next
epoch boundary)
       ↓
3. At epoch boundary: vault collateralizes $ZDLT in
the Zirodelta Lending Pool
       ↓
4. USDT borrowed against collateral → deploys to Beta-
X1 engine
       ↓
5. Engine captures funding rate deltas across 19+
exchanges
       ↓
6. At next epoch boundary: revenue finalized → 60%
distributed pro-rata
       ↓
7. $ZDLT never sold. Sits as collateral. Earns yield
starting next epoch.
```

Deposit timing: A deposit made at 10:00 UTC enters the buffer. At 16:00 UTC (next epoch boundary), the collateral activates and begins earning yield. The depositor's first yield distribution arrives at 00:00 UTC — one full epoch of farming.

The Lending Pool

Zirodelta operates its own lending pool — not a third-party protocol. The USDT in the pool comes from protocol-controlled sources:

- **Phase A:** Agent-hire revenue accumulates USDT directly
- **Phase B:** Investor capital seeds the pool
- **Phase C:** External USDT depositors contribute for above-market rates

Because the protocol controls both sides — the collateral (vault) and the capital (lending pool) — there is no dependency on external lending protocols, no third-party liquidation risk, and no external governance that could freeze or alter terms.

Collateral Mechanics

- **Loan-to-Value (LTV):** Conservative 40-50%. $ZDLT collateral must exceed borrowed USDT value by 2-2.5×.
- **Health monitoring:** AutoDeleverageWorkflow continuously monitors collateral health. If $ZDLT price drops and LTV rises toward 70%, positions automatically unwind to free USDT and restore healthy ratios.
- **No forced selling of $ZDLT.** If collateral health degrades, the protocol reduces its farming positions (freeing USDT), not liquidating depositor $ZDLT. The depositor's tokens are protected.
- **LTV snapshots at epoch boundaries.** Collateral health is evaluated at each epoch transition, ensuring consistent risk assessment aligned with capital deployment cycles.

Yield Distribution

Depositors earn yield in USDT, not $ZDLT. This is critical:

- Yield comes from **external revenue** (funding rate payments from exchanges), not from minting new tokens
- Yield is calculated **per epoch** — revenue from epoch N is attributed only to depositors who were active at epoch N's start
- Distributed **pro-rata** based on each depositor's share of total vault collateral during that epoch
- Claimable at any time — yield accrues to the depositor's balance and does not require active management
- Yield rate depends on: farming performance, total vault deposits, and capital utilization
- **No yield on deposit epoch.** Deposits activate at the next epoch boundary. This prevents deposit-just-before-settlement gaming.

Revenue Recognition: Funding Settlements, Not Position Closes

A common misconception: "if the engine holds a position for multiple epochs, when is the yield?" The answer: **every epoch.**

Exchanges settle funding rates at different intervals — not all on 8-hour cycles:

Interval	Exchanges
1 hour	Hyperliquid, dYdX, Drift
4 hours	Select Bybit pairs
8 hours	Binance, OKX, Gate, Bybit (most pairs), KuCoin, BitMEX, and most CEXs

The engine operates on each exchange's native settlement schedule — a Hyperliquid position collects funding 8 times per vault epoch, while a Binance position collects once. The **vault epoch is an accounting boundary, not a trading boundary.** At each 8-hour epoch boundary, all funding payments collected across all positions and all exchanges during that window are aggregated into a single epoch revenue figure.

```
Vault Epoch 5 (08:00 - 16:00 UTC):

  Binance ETH position:  1 settlement at 16:00  → +
$14.00
  Hyperliquid BTC pos:   8 settlements (hourly) → +
$3.20 × 8 = +$25.60
  dYdX SOL position:     8 settlements (hourly) → +
$1.10 × 8 = +$8.80
  Bybit ARB position:    1 settlement at 16:00  → +
$6.40

  ──────────
  Total epoch 5 revenue:                          +
$54.80
  → 60% ($32.88) distributed pro-rata to depositors
  → 25% ($13.70) to protocol growth
  → 15% ($8.22) to buyback & burn
```

Depositors see one yield number per epoch. The engine handles the complexity of mixed settlement intervals underneath.

Position closing is a capital event, not a revenue event. The engine closes positions when: - The funding delta flips (no longer profitable) → `RebalanceWorkflow` - Margin becomes critical → `AutoDeleverageWorkflow` - Capital is needed for withdrawals → `AllocationWorkflow`

Closing frees capital. It does not generate revenue — the revenue was already collected at each funding settlement.

Trading costs (entry/exit fees, slippage, bridge costs) are deducted from the epoch they occur in. A position opened in epoch 3 has its entry costs deducted from epoch 3's revenue. If it closes in epoch 7, exit costs are deducted from epoch 7. This ensures no epoch's yield is inflated by deferring costs.

Cost of Capital: Lending Pool Interest

The vault deposits $ZDLT as collateral and borrows USDT from the Zirodelta Lending Pool. That borrowed USDT has a cost — the lending pool charges interest, which must be deducted from gross farming revenue **before** the 60/25/15 split.

```
Gross farming revenue (epoch):                $15,000
- Trading costs (fees, slippage, bridge):        -$200
- Lending pool interest on borrowed USDT:        -$150

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= Net protocol revenue:                        $14,650
  → 60% vault depositor yield:                   $8,790
  → 25% protocol growth:                         $3,662
  → 15% buyback & burn:                          $2,198
```

Where the interest goes depends on the capital phase:

Phase	USDT Source	Interest Rate	Interest Paid To
A (Bootstrap)	Protocol's own USDT from agent-hire revenue	0% — protocol lending to itself	N/A (retained as protocol growth)
B (Investor)	Investor capital	Agreed rate (target 12-15% APR)	Investors
C (External)	External USDT depositors	Market rate (12-15% APR)	External lenders

Example at Phase C scale: - Vault holds $2M worth of $ZDLT collateral - 50% LTV → $1M USDT borrowed from lending pool - Lending pool rate: 15% APR → ~$411/day interest cost (~$137 per 8h epoch) - If engine generates $500/epoch gross → $500 - $137 interest = $363 net → split 60/25/15 - If engine generates $50/epoch gross → $50 - $137 = -$87 → **net loss epoch** (no distribution, loss carried forward)

Net-loss epochs. If trading costs + lending interest exceed gross farming revenue in an epoch, no yield is distributed. The deficit carries forward and must be recovered in subsequent epochs before distributions resume. This protects depositors from receiving yield that doesn't exist while ensuring the lending pool always gets paid.

Interest accrual. Lending pool interest accrues continuously but is settled at epoch boundaries, matching the vault's accounting cycle. The per-epoch interest cost is: `(USDT borrowed × annual rate) / (365 × 3)` (three epochs per day).

Withdrawal Mechanics

Withdrawals follow the same epoch discipline. When a depositor requests withdrawal:

1. Request enters the **withdrawal queue** for the current epoch
2. At epoch boundary: **AllocationWorkflow** reduces the capital target by queued withdrawal amounts
3. **RebalanceWorkflow** closes lowest-performing positions first to free USDT
4. Positions close **after** funding settlement to collect the last payment
5. Freed USDT repays the lending pool → $ZDLT collateral released to depositor

Situation	Wait time
Reserve buffer has enough USDT	Next epoch boundary (≤8h)
Small amount, next rebalance frees it	1 epoch (8h)
Medium amount, needs position close	1-2 epochs (8-16h)
Large amount (>30% of deployed capital)	2-3 epochs (16-24h)

Reserve buffer. The protocol maintains a USDT reserve (10-15% of deployed capital) for faster withdrawals. If the buffer covers the request, $ZDLT is released at the next epoch boundary without unwinding any positions.

Queue priority. Withdrawal requests are processed in FIFO order within each epoch. Large withdrawals that exceed the buffer are spread across subsequent epochs as positions close.

No withdrawal penalty. Depositors can withdraw at any time without fee. The only variable is timing — withdrawals process at epoch boundaries, and large amounts may span multiple epochs.

Last-epoch yield. Depositors who request withdrawal during epoch N still earn yield for epoch N (their capital was active). The withdrawal processes at the epoch N+1 boundary.

What the Vault Is NOT

- **Not a custodial fund.** The protocol never takes ownership of deposited $ZDLT. The vault smart contract holds tokens; the depositor retains the right to withdraw at any time.
- **Not a staking contract.** There are no lock periods, no slashing, no governance obligations.
- **Not a liquidity pool.** Deposited $ZDLT is not traded against, paired, or subject to impermanent loss.
- **Not yield farming via emissions.** Yield comes from external revenue (funding rates), not printed tokens.

7. Three Capital Phases

Each phase proves the next one is safe to enter. No phase requires faith — only data from the previous phase. Each phase activates a new capital class while keeping previous classes running.

Phase A: Prove the Engine (Class C Only)

Trigger: Farming skill goes live on OpenAgentMarket.

The protocol trades with its own capital. Agent-hire revenue and seed capital accumulate USDT in the treasury → treasury deploys to Beta-X1 as Class C capital → 100% of profits retained → transparency dashboard shows real P&L → track record established.

Active classes: Class C **Revenue sources:** Protocol trading profits (100%) + agent-hire fees **Capital required:** $0 (bootstrapped from agent-hire revenue)

Exit criteria: 30-60 days of positive P&L on transparency dashboard.

Phase B: Institutional Capital (Class C + Class B)

Trigger: Track record established, institutional interest confirmed.

Institutional partners deploy USDT directly into the engine under managed account terms (Class B). Each partner negotiates their own fee structure. The protocol earns performance fees (20-30%) on institutional capital alongside its own Class C profits.

Active classes: Class C + Class B **Revenue sources:** Protocol trading profits + institutional performance fees + agent-hire fees **New capability:** Engine proven at scale with external capital, multi-pool accounting live

Exit criteria: 90+ days positive P&L at scale, multi-pool engine running stable.

Phase C: Vault Opens (Class C + Class B + Class A)

Trigger: Engine proven at institutional scale, vault smart contract audited.

$ZDLT holders deposit into the Zirodelta Vault (Class A). Collateral borrows USDT from the Zirodelta Lending Pool. The lending pool is funded by protocol growth allocation (25% of Class A revenue), institutional USDT (from Phase B partners who opt into lending), and external USDT depositors who earn above-market rates (12-15% APR).

Active classes: Class C + Class B + Class A **Revenue sources:** All four — protocol profits, vault fees, institutional fees, agent-hire **New capability:** Full flywheel active, protocol self-sustaining

The protocol becomes self-sustaining: all three capital classes run simultaneously on one engine, each with isolated accounting, and all four revenue sources feed the treasury.

8. Capital Architecture

The engine is a multi-pool execution layer. The vault is one client — not the only one.

Three Capital Classes

Class	Capital Source	Fee Structure	$ZDLT Required	Phase
Class C	Protocol treasury	0% (own money)	No	A, B, C
Class B	Institutional partners	20-30% performance fee (negotiated)	No	B, C
Class A	$ZDLT vault depositors	40% (25% growth + 15% burn)	Yes	C

Each class operates as an isolated capital pool within the same engine:

- **Separate accounting.** Every pool has its own epoch-level P&L tracking. Class A revenue never subsidizes Class B, and vice versa.
- **Separate fee structures.** Class A pays 40% of gross. Class B pays 20-30%. Class C pays nothing. Different fees, same gross return rate per dollar.
- **Separate risk limits.** Each pool has its own maximum allocation, per-exchange exposure caps, and drawdown limits.
- **Shared infrastructure.** All classes use the same scanning, execution, and risk engine. The engine's capacity is the shared resource — not the profits.

Anti-Dilution: How Classes Coexist

All capital classes access the same trading opportunities. Positions are allocated **pro-rata by capital** — every dollar gets the same gross return rate regardless of which class it belongs to.

```
Engine opportunity: BTC funding delta, $500K capacity,
0.16%/day gross

Class C capital: $100K  → gets $100K of the position →
earns $160/day gross → keeps $160 (100%)
Class B capital: $200K  → gets $200K of the position →
earns $320/day gross → keeps $224-$256 (70-80%)
Class A capital: $200K  → gets $200K of the position →
earns $320/day gross → keeps $192 (60%)

Total deployed: $500K. Everyone gets 0.16%/day gross.
Net differs by fee structure.
```

No class gets priority access to trades. Pro-rata allocation ensures equal treatment. The only difference between classes is what percentage of gross returns the depositor keeps vs. what the protocol retains as fees.

Capacity Governance

The engine has finite capacity — determined by available opportunities, exchange liquidity, and position sizing constraints. More capital beyond capacity reduces everyone's effective return.

Protection mechanisms:

1. **Capital caps per class.** Each class has a maximum allocation. The engine knows its total capacity and does not accept capital beyond it.
2. **Vault deposit cap.** Class A (vault) accepts deposits up to remaining engine capacity after Class C and Class B allocations. When full, new deposits are queued until capacity expands.
3. **Capacity expansion.** Adding exchanges, pairs, and strategies grows the opportunity set. The current 93 active pairs across 19 exchanges represent a fraction of the total addressable market. As the engine connects more venues, capacity scales.

4. **Transparency.** Current engine capacity, utilization per class, and available headroom are published on the transparency dashboard. Depositors can see exactly how much room remains before returns start compressing.

Why Multi-Pool Matters

A single-pool architecture forces a choice: optimize for retail holders OR for institutional partners. Multi-pool solves this:

- **Institutional partners** (Wintermute, market makers) deploy USDT directly. No token exposure required. Standard managed account terms they're familiar with.
- **$ZDLT holders** deposit through the vault. Earn yield plus benefit from buyback & burn. The token ecosystem they signed up for.
- **The protocol itself** compounds treasury capital at zero cost. The foundation of the track record and the most capital-efficient pool.

One engine. Three clients. Four revenue streams. Each pool makes the others stronger — Class C proves the engine, Class B proves scale, Class A proves product-market fit.

9. Yield Integrity

Every yield claim in crypto deserves scrutiny. Zirodelta's yield model is designed to withstand it.

Where does the yield come from?	Funding payments between leveraged traders on perpetual futures markets — the largest, most active trading venues in crypto. All capital classes earn from the same source. Additionally, per-request fees from AI agents hiring Zirodelta on OpenAgentMarket feed into protocol treasury (Class C).
Who takes the risk?	The protocol. Zirodelta trades its own capital. Vault depositors' $ZDLT remains as collateral — they are not exposed to directional trading risk.
Was this a presale?	No. Fair launch. The protocol earned zero from the token sale.
Is it inflationary?	No. No tokens are minted. Supply only decreases through buyback & burn.
Does it depend on $ZDLT price?	No. Funding rates are a function of leverage demand, not token valuation.
Does it depend on new users?	No. Yield depends on perpetual futures trading activity, driven by the broader market — not by Zirodelta's user growth.
What happens in a market crash?	Funding rates typically increase during high volatility. More leverage, more liquidations, more aggressive positioning — all amplify funding flows. The protocol's hedged positions are market-neutral. A crash doesn't

	create directional loss. It creates bigger spreads.
Can it go to zero?	Only if perpetual futures markets cease to exist entirely — an outcome that would represent a fundamental restructuring of the entire crypto derivatives ecosystem.

10. Risks

Funding rate arbitrage is not risk-free. Zirodelta mitigates — but does not eliminate — the following risks.

Execution Risk

Timing differences between exchanges during position entry or exit can create brief, unintended directional exposure.

Mitigated by: Hedged-only execution architecture. Emergency close logic: if one leg fails, the other is immediately unwound. Pre-trade validation includes liquidity depth checks and funding persistence thresholds.

Liquidation Risk

Extreme price movements can threaten margin on one leg of a hedged position.

Mitigated by: Strategy-level margin monitoring across the full position. Automatic rebalancing triggers (AutoDeleverageWorkflow). Conservative leverage (default 5×) and capacity-aware sizing.

Exchange and Counterparty Risk

Centralized exchanges may experience downtime, API outages, withdrawal freezes, or insolvency.

Mitigated by: Capital diversification across 19+ venues. Per-exchange exposure caps. Continuous API health monitoring. Automatic halt and unwind when degradation is detected.

Funding Rate Compression

Spreads can narrow during low volatility or high arbitrage competition.

Mitigated by: 36 exchange adapters monitoring thousands of opportunities. Automatic rotation to highest-yielding pairs. Long-tail asset coverage where institutional competitors are absent.

Collateral Risk

$ZDLT price decline could reduce collateral value below borrowing thresholds in the Zirodelta Lending Pool.

Mitigated by: Conservative loan-to-value ratios (40-50%). AutoDeleverageWorkflow monitors collateral health. Positions unwind to free USDT and restore ratios before liquidation thresholds — protecting depositor $ZDLT from forced selling.

Infrastructure Risk

Trading infrastructure depends on hosting and connectivity.

Mitigated by: Temporal workflow orchestration with durable execution guarantees — workflows resume automatically after interruptions. Position state tracked in ClickHouse and on exchanges, not in ephemeral memory.

11. Roadmap

Operational Now

- Core delta arbitrage engine — 36 exchange adapters, 19+ exchanges, thousands of live opportunities
- AI agent farming skill built for OpenClaw
- Cross-exchange capacity scanning and delta computation (live, every 15 min)
- 1.4M+ funding rate records in ClickHouse analytics
- On-chain $ZDLT token on Solana (fair launch, fixed supply)
- Transparency dashboard infrastructure

Phase A: Prove the Engine (Class C)

- Exchange API keys configured (Binance, OKX, Gate minimum)
- Deploy farming skill on OpenAgentMarket
- First agent-hire revenue → compounds into Class C capital
- Live P&L on transparency dashboard
- 30-60 day track record on protocol's own capital

Phase B: Institutional Capital (Class C + Class B)

- Institutional partners deploy USDT directly (Class B managed accounts)
- Multi-pool accounting and isolated P&L tracking live
- Engine proven at scale with external capital
- 90+ days positive P&L across multiple capital pools

Phase C: Vault Opens (Class C + Class B + Class A)

- Zirodelta Vault smart contract deployed on Solana (Class A)
- $ZDLT holders begin earning yield from vault deposits

- Zirodelta Lending Pool funded by protocol growth + institutional USDT + external lenders
- Buyback & burn operations begin (15% of Class A revenue)
- All three capital classes running simultaneously
- Protocol self-sustaining, cross-chain expansion

12. Legal Notice

Zirodelta LLC is incorporated in Wyoming, United States.

This whitepaper is provided for informational purposes only and does not constitute an offer to sell, a solicitation of an offer to buy, or a recommendation of any security, investment product, or financial service. Nothing in this document should be construed as legal, financial, tax, or investment advice.

$ZDLT is a utility token designed for use within the Zirodelta ecosystem. $ZDLT does not represent equity, ownership shares, profit-sharing rights, or securities of any kind. Vault deposits constitute collateralized lending — depositors retain ownership of their $ZDLT and earn yield from clearly defined DeFi lending activities, not from the efforts of the Zirodelta team.

Yields and returns referenced in this document are based on historical alpha-phase performance and live market data. They are not guaranteed. Past performance is not indicative of future results. Funding rate arbitrage involves material risks including but not limited to execution risk, liquidation risk, exchange counterparty risk, collateral risk, capital risk, and infrastructure risk.

Participants should conduct their own research and consult independent legal and financial advisors before engaging with any Zirodelta products or acquiring any Zirodelta-related assets.

Appendix A: Howey Test Analysis

Background

The Howey Test (SEC v. W.J. Howey Co., 1946) is the primary framework U.S. regulators use to determine whether an instrument constitutes an "investment contract" — and therefore a security. If all four prongs are satisfied, the instrument is likely a security and subject to SEC registration requirements.

The four prongs: (1) an investment of money, (2) in a common enterprise, (3) with an expectation of profits, (4) derived primarily from the efforts of others.

Zirodelta's tokenomics are specifically designed to fail one or more prongs of this test.

Prong-by-Prong Analysis

1. Investment of Money

Test: Did the holder invest money or valuable consideration to acquire the token?

Analysis: $ZDLT launched via fair launch with no presale, no ICO, no VC allocation, and no treasury sale. The protocol received zero proceeds from token distribution. Holders acquired $ZDLT on the open market through secondary trading — the same way they acquire any commodity or collectible. There was no "investment" into the protocol.

Assessment: Weakened. No capital flowed from token buyers to the protocol. This distinguishes $ZDLT from ICOs and presale tokens where Howey Prong 1 is clearly met.

2. Common Enterprise

Test: Are holders' fortunes tied together and/or to the promoter's success?

Analysis: Two paths exist for $ZDLT holders, and they function independently:

- **Passive holders** benefit from buyback & burn — a mechanical, automated process that reduces supply regardless of any individual's participation. This is more analogous to a stock buyback program than a pooled investment.
- **Vault depositors** enter a collateralized lending arrangement. Their $ZDLT is collateral; they receive yield from a specific, identifiable activity (funding rate arbitrage). This is structured as a lending relationship, not a pooled investment.

Critically, vault depositors can choose whether to participate, when to enter, and when to exit — with no lock periods and no penalties. The "enterprise" is the depositor's individual lending decision, not a common pool.

Assessment: Weakened for passive holders (no pooling of funds). Partially present for vault depositors (protocol manages deployed capital), but mitigated by the lending structure.

3. Expectation of Profits

Test: Do holders expect to profit from their holding?

Analysis: This prong is the hardest to avoid for any token with economic utility. However, the nature of the profit expectation matters:

- **Vault depositors** expect yield — but from a **specific, disclosed lending activity** (collateralized USDT lending for funding rate arbitrage), not from general "efforts of the team." This is analogous to depositing into a lending protocol like Aave or Compound, which the SEC has not classified as securities.
- **Passive holders** may expect price appreciation from buyback & burn, but supply reduction from token burning is a mechanical property of the token design, not a profit promise.

Assessment: Present but contextualized. Profit expectation exists, but it's tied to specific DeFi mechanics (lending, automated buyback) rather than general "team will make number go up" promises.

4. Primarily from the Efforts of Others

Test: Are expected profits derived primarily from the managerial or entrepreneurial efforts of the promoter or a third party?

This is the critical prong — and where Zirodelta's design creates the strongest separation.

Analysis:

- **No governance token.** $ZDLT grants zero governance rights. Holders do not vote, do not direct protocol operations, and have no say in trading strategy. This is intentional: the protocol operates autonomously.
- **Vault is opt-in lending, not passive investment.** Depositors make an active decision to collateralize their $ZDLT. They choose when to deposit, how much, and when to withdraw. The yield they receive is from a specific lending activity — not from "the efforts of the Zirodelta team" in a general sense.
- **The farming engine operates autonomously.** Beta-X1 runs as a deterministic workflow system with AI agent oversight. It does not require ongoing managerial decisions to generate yield. The system scans, identifies, executes, and distributes — mechanically.
- **Revenue comes from external markets, not team promotion.** Funding rate yield depends on the existence of perpetual futures markets and leverage demand — factors entirely outside Zirodelta's control or promotion. The team does not "create" the yield.
- **Buyback & burn is automated.** The 15% revenue allocation to buyback operates via smart contract. No team discretion is involved in executing burns.
- **Open-source transparency.** All P&L is published. Dashboard is public. Methodology is disclosed. The information asymmetry between "promoter" and

> "investor" — which Howey is designed to address — is minimized by design.

Assessment: Significantly weakened. While the Zirodelta team built and maintains the infrastructure, the yield-generating mechanism (funding rate markets) exists independently of the team's efforts. The vault is structured as lending, not investment. The buyback is automated, not discretionary. Depositors make active choices, not passive investments.

Structural Safeguards

Zirodelta's design incorporates several features specifically to maintain separation from securities classification:

Feature	Why it matters
Fair launch (no presale/ICO)	No "investment of money" into the protocol
No governance rights	Holders are not "investors" in a common enterprise
No lock periods or staking penalties	Depositors retain full control at all times
Yield from external markets	Not dependent on team's promotional efforts
Automated buyback & burn	No discretionary "profit distribution"
Opt-in vault with active deposit/ withdraw	Lending relationship, not passive investment
No profit guarantees or projections	Protocol reports historical data, not forward promises
USDT yield (not $ZDLT emissions)	Yield is real revenue, not inflationary token printing
Public transparency dashboard	Minimizes information asymmetry (key Howey concern)

What This Is NOT

This analysis is not legal advice. It is not a guarantee that the SEC or any regulator will agree with this classification. Regulatory frameworks evolve, and enforcement priorities shift.

What this analysis demonstrates is that Zirodelta's tokenomics were **designed with Howey in mind** — not as an afterthought, but as a structural principle. Every major design decision (fair launch, no governance, lending structure, automated buyback, external yield source) was made to create genuine separation between $ZDLT and the legal definition of a security.

Holders and participants should consult independent legal counsel for jurisdiction-specific guidance.

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