VEKTOR

BY

INVESTPUPPY

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Risk & Limitation Disclosure

For institutional due diligence teams, risk committees, and compliance officers

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ABSTRACT

This paper does not exist to satisfy a legal requirement. It exists because institutional investors conducting due diligence should have a single, structured document that addresses platform risk directly — not distributed across white papers or buried in product documentation. The tone is the same as the rest of the Vektor research series: specific, honest, and free of hedging language that obscures rather than informs. Where a risk is real, this paper says so. Where a mitigation is partial, this paper says that too.

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HOW TO READ THIS DOCUMENT

This document is a practitioner's risk analysis — structured in the same format as any internal risk assessment a portfolio manager or compliance officer would produce when evaluating a new system. It identifies risks, assesses likelihood and impact, states mitigations in place, and is honest about where mitigations are still on the roadmap.

It is not a legal disclaimer. It does not attempt to limit liability through exhaustive caveats. Readers seeking a legal risk disclosure should request the separate legal documentation available to Proof Partners.

RISK SUMMARY

Fourteen identified risks across four categories. Read across: risk area, likelihood, impact, mitigation in place.

MODEL RISK

The risk that model-generated signals do not perform in live conditions as they did in backtests.

THE BACKTEST TO LIVE GAP

The most significant risk in any systematic strategy is the gap between backtest performance and live performance. Backtests are optimised on historical data. Live markets introduce conditions historical data may not have captured: regime changes, liquidity shifts, correlation breakdowns, and the market impact of the strategy itself.

Vektor's structural response is the XGBoost signal validation layer: every signal is evaluated against current market conditions before it is presented to the portfolio manager. A signal that performed well in backtests but is assessed as low-confidence against current conditions is filtered before PM review.

OVERFITTING

The grid search optimises technical indicator parameters against a three-year historical window. Optimised parameters may reflect historical noise rather than genuine signal. Mitigations: Sharpe ratio as objective function, six-indicator universe limiting parameter space, three-year window covering multiple market regimes. A second mitigation layer — XGBoost signal confidence filtering — validates every signal against current market conditions before PM review. A third layer — news sentiment analysis over a rolling window — is on the near-term roadmap, providing orthogonal signal confirmation from a data source independent of price history. See WP-11: Signal Robustness Architecture.

SIGNAL DECAY

Technical indicators lose predictive power as market conditions change. Vektor's response: parameters are re-optimised at each strategy build, not fixed at initial setup. Rebalancing trigger detection is on the roadmap. Current practice: PM reviews signal performance against current market conditions at each strategy approval.

CONCENTRATION RISK

Efficient frontier optimisation may produce concentrated allocations in instruments with correlated historical performance. Mitigation: correlation matrix verification is a required optimisation step, flagging high pairwise correlation before PM approval. Sector diversification screening applied in universe reduction.

EXECUTION RISK

The risk that approved positions are not executed as intended.

PAPER TRADING VS LIVE GAP

The IBKR Gateway is currently connected to the IBKR paper trading account. Paper trading does not fully replicate live execution: fills are assumed at the requested price without market impact, partial fills do not occur, and liquidity is not modelled. Live execution will be activated before the first Proof Partner client is onboarded — this is a defined trigger condition, not an open-ended roadmap item.

IBKR CONNECTIVITY FAILURE

If the IBKR Gateway loses connectivity, the SQS queue buffers orders rather than failing them. Orders are processed when connectivity is restored. Slack notification on order completion means a failure to complete is visible immediately.

LOT ROUNDING AND MINIMUM MANDATE SIZE

Share quantities must be whole numbers. The allocation calculation rounds down to the nearest lot size, producing a residual cash balance. At 98.94% efficiency in the SGX reference simulation (100-share board lots); single-share lot markets consistently exceed 99.94%, this residual is immaterial for typical mandate sizes. The practical minimum recommended mandate size for a ten-instrument SGX portfolio is SGD

100,000.

DATA RISK

The risk that market data used for optimisation or execution is inaccurate, unavailable, or unrepresentative.

MARKET DATA SOURCE DEPENDENCY

Equity price history and live prices are currently sourced from Yahoo Finance — a widely used, generally reliable source for listed equity data, but a free provider without an enterprise SLA. Data quality issues do occur occasionally. Quality checks run on ingestion. A Bloomberg or institutional market data feed can be substituted without architectural changes — available as a Proof Partners configuration option.

MARKET DATA OUTAGE

If the daily price download fails, existing three years of historical data in RDS is unaffected. New strategy builds or signal re-optimisations would be deferred until the feed is restored. Slack notification on download completion means failure is visible immediately.

CORPORATE ACTION HANDLING

Yahoo Finance applies adjusted close prices that account for most corporate actions. Edge cases may affect signal quality for affected instruments. The PM review is the appropriate point to assess any known corporate action effects.

OPERATIONAL RISK

The risk that platform operations introduce errors or failures that affect client outcomes.

HUMAN ERROR AT APPROVAL GATES

Every capital-affecting action requires explicit human approval — which is the primary operational risk mitigation and also the source of a residual risk: human error at the gate itself. Mitigations: the complete strategy breakdown is visible at the approval screen, reducing undetected errors. The audit trail records every approval with PM identity and timestamp.

ROLE SEPARATION

The three-role model separates research (Analyst), investment decisions (PM), and cash operations (Operations). An Analyst cannot approve strategies. Operations cannot initiate allocations. Infrastructure-level RBAC — enforcing this at the AWS IAM layer — is planned for the next prototype iteration.

PLATFORM UNAVAILABILITY

ECS microservices on Fargate restart automatically on failure. RDS has automated daily backups. The SQS queue persists market orders through application restarts. No formal SLA is committed at the current stage. Production observability alerting is on the near-term roadmap.

RISK MITIGATION ROADMAP

Mitigations on the roadmap but not yet live — with defined trigger or condition for each.

CONCLUSION

The risks described in this paper are real. Some are inherent to systematic portfolio management regardless of platform. Some are specific to the current stage of Vektor's development. The mitigations described are genuine — either structurally enforced by the platform architecture or explicitly on the roadmap with defined trigger conditions.

The Proof Partners is a partnership in which both parties are building toward the same outcome — a platform that performs as described, with the governance and controls that institutional management requires. Proof Partners are invited to raise any risk they do not see addressed in this document. That conversation is part of the partnership.

For compliance and audit trail architecture, see WP-06. For AI and ML governance, see WP-08. For technical infrastructure, see WP-07. All documents at investpuppy.com.