Verification Control Document

for the

Algorithmic Trading System

DEMO-2026-001

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Revision history

Version	Date	Description	Changes
2.0	2026-10-06	Restructured report.	7 added, 19 modified
1.1	2026-01-21	Non-functional SysML changes.	1 modified
1.0	2025-11-10	Initial version	32 added

Changes since last version

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Introduction

Purpose

This document lists the requirements of the algorithmic trading platform, the methods by which each one is verified and its close-out status. This issue records the verification of **Release v1.0.0.**

The document is generated from the SysML v2 model of the system. Requirements, traceability and verdicts are as recorded in the model at the time of issue.

Scope

The requirements included in this document drive the development of the Algorithmic Trading System and ensure that the final deliverable aligns with regulatory compliance, risk management needs, and trading performance objectives. This document serves as a foundation for system design, development, testing, and validation.

Applicable documents

The regulations and standards the requirements trace to:

Table 1: Applicable documents

Document	Title	Version	Cited by
MiFID-II	Markets in Financial Instruments Directive II	2018	STKR-EXEC-002, STKR-COMP-002, SYS-COMP-001, SYS-COMP-004
SEC-Rule-15c3-5	SEC Market Access Rule	2010	STKR-EXEC-002, STKR-RISK-003
FINRA-Rules	FINRA Algorithmic Trading Rules		STKR-EXEC-002, STKR-COMP-003
Regulation-NMS	Regulation National Market System		STKR-EXEC-002, STKR-COMP-004

Verification approach

Verification methods

Every test case verifies its requirement by one or more of four methods:

- **Inspection**: examining the system or its records against the requirement.
- **Analysis**: drawing a conclusion from measurements, models or calculations.
- **Demonstration**: operating the system and observing that it behaves as required.
- **Test**: exercising the system under controlled conditions and comparing the measured results with the success criteria.

Each test case follows one of the verification approaches below, which fixes its methods and the environment it runs in:

Table 2: Verification approaches

Approach	Methods	Environment	Description
Decomposed	Analysis		The verification definition is decomposed into smaller ones based on the requirement decomposition.
RequiresValidation	Analysis		Direct verification of the requirement is not possible in test environments and requires validation through live trading or extended operational monitoring.
UsesBacktest	Test, Analysis	Market Simulator	The requirement is verified using historical market data replay with realistic execution simulation including slippage, market impact, and latency modeling. Common frameworks include backtrader, vectorbt, or custom simulation engines.
UsesExchangeSimulator	Test	Exchange Test Environment	The requirement is verified in exchange test environments that simulate production matching engines and FIX/binary protocol implementations. May include exchange-provided simulators or third-party tools like QuickFIX.
UsesLatencyBenchmark	Test	Production-like Staging	The requirement is verified using precision timing measurements with hardware timestamping or kernel-level instrumentation. Latency is measured at percentiles (50th, 99th, 99.9th) under realistic load conditions.
UsesLoadTest	Test, Analysis	Production-like Staging	The requirement is verified by generating sustained high-volume message traffic to validate throughput capacity, queueing behavior, and system stability under peak load. Uses specialized load generation tools or custom harnesses.
UsesIntegrationTest	Test	Market Simulator	The requirement is verified through automated integration tests that validate component interactions,

Approach	Methods	Environment	Description
			data flows, and end-to-end scenarios. May use testing frameworks like pytest, unittest, or custom test harnesses.
UsesManualTest	Demonstration		The requirement is verified by human testers performing specified procedures and validating outcomes. Used for UI/UX validation, operational procedures, and scenarios difficult to automate.
UsesComplianceAudit	Inspection, Analysis	Auditor	The requirement is verified through audit of regulatory reporting outputs, audit trail completeness, and data integrity. May involve compliance consultants or third-party audit firms validating against regulatory requirements (MiFID II, SEC Rule 15c3-5, etc.).
UsesFailoverTest	Test, Analysis	Production-like Staging	The requirement is verified by simulating component failures and validating failover behavior, recovery procedures, and business continuity mechanisms. Includes chaos engineering approaches.

Verification environments

Compliance audits review the audit records of the system under verification rather than running in a test environment.

Table 3: Verification environments

Environment	Description
Exchange Test Environment	Exchange-provided test/certification environment for pre-production validation (e.g., CME Certify, ICE Test, NASDAQ OMX Test).
Market Simulator	Market replay environment using historical or synthetic data for functional testing and strategy validation.
Production-like Staging	Production-equivalent infrastructure for load testing and final validation before deployment.

Requirements

Requirement types

Each requirement ID starts with the prefix of its type:

Table 4: Requirement types

Prefix	Type	Description
STKR-EXEC	Trading Firm Requirement	Business objectives of the firm that owns the platform, such as return targets, regulatory standing and loss tolerance. Approved by executive management.
STKR-USER	Trading Team Requirement	Needs of the quantitative traders who develop and run strategies: backtesting, deployment, monitoring, intervention and latency.
STKR-RISK	Risk Management Requirement	Needs of the risk managers who bound trading exposure: position and loss limits, pre-trade checks and emergency halts.
STKR-COMP	Compliance Requirement	Obligations the compliance officer answers for to the regulator: audit trail, regulatory reporting, market abuse surveillance and best execution.
SYS-PERF	Performance Requirement	Measurable timing, capacity and availability bounds: latency, throughput and uptime during market hours.
SYS-FUNC	Functional Requirement	Capabilities the platform provides: market data handling, order tracking, P&L, historical replay and strategy control.
SYS-RISK	Risk Control Requirement	Automatic controls that block or halt trading: order size, position and price checks, duplicate blocking, the kill switch, the daily loss halt and correlation alerts.
SYS-COMP	System Compliance Requirement	Records and checks the platform keeps for regulatory compliance: order logging, best execution monitoring, restricted lists, transaction reports and market abuse detection.

Stakeholders

Table 5: Stakeholders

Stakeholder	Description
TradingFirm	Financial institution engaged in algorithmic trading activities. Client of the trading platform.
QuantitativeTrader	Develops and refines trading strategies using quantitative analysis and backtesting.
RiskManager	Monitors and controls trading risk through limits and real-time surveillance.
ComplianceOfficer	Ensures regulatory compliance and maintains audit trails for regulatory reporting.
TechnologyTeam	Maintains system infrastructure, monitors performance, and handles incident response.
ExecutiveManagement	Provides business oversight and makes strategic decisions regarding trading operations.
Regulator	Government agency overseeing market integrity (SEC, FINRA, ESMA).
Broker	Provides execution and clearing services for trading activities.
Exchange	Market infrastructure provider where securities are traded.
Investor	Provides capital to the trading firm and expects returns.

Venue and broker are external parties the system works with. All other roles are stakeholders.

Table 6: Roles of stakeholders and actors per requirement

	TradingFirm	QuantitativeTrader	RiskManager	ComplianceOfficer	TechnologyTeam	ExecutiveManagement	Regulator	Broker	Exchange	Investor
STKR-EXEC-001	owner					approver				investor
STKR-EXEC-002	owner					approver				
STKR-EXEC-003	owner					approver				
STKR-USER-001		owner								
STKR-USER-002		owner								
STKR-USER-003		owner								
STKR-USER-004		owner								
STKR-USER-005		owner								
STKR-RISK-001			owner							
STKR-RISK-002			owner							
STKR-RISK-003			owner							
STKR-RISK-004			owner							
STKR-RISK-005			owner							
STKR-COMP-001				owner			regulator			
STKR-COMP-002				owner			regulator			

	TradingFirm	QuantitativeTrader	RiskManager	ComplianceOfficer	TechnologyTeam	ExecutiveManagement	Regulator	Broker	Exchange	Investor
STKR-COMP-003				owner			regulator			
STKR-COMP-004				owner			regulator	broker		
SYS-PERF-004					maintainer					
SYS-FUNC-001									venue	
SYS-FUNC-003									venue	
SYS-COMP-002								broker		

System overview

Each requirement is satisfied by the platform as a whole or by one of its components, as listed in the Satisfaction matrix.

Table 7: Platform components

Component	Type	Description
platform	Algorithmic Trading Platform	Complete algorithmic trading system integrating market data ingestion, strategy execution, risk management, order execution, and regulatory compliance.
marketDataHandler	Market Data Handler	Ingests real-time market data from exchanges, normalizes formats, and distributes to downstream components.
strategyEngine	Strategy Engine	Executes trading strategies, analyzes market data, and generates trading signals based on configured algorithms.
orderManagement	Order Management System	Creates, routes, modifies, and tracks orders throughout their lifecycle. Maintains order book and state.
riskManagement	Risk Management System	Performs pre-trade and post-trade risk checks. Enforces position limits, loss limits, and can halt trading.
executionManagement	Execution Management System	Routes approved orders to exchanges and brokers. Implements smart order routing and execution algorithms.
compliance	Compliance Module	Ensures regulatory compliance through audit logging, trade surveillance, and regulatory reporting.
backtesting	Backtesting Engine	Tests trading strategies on historical market data with realistic execution simulation.
monitoring	Monitoring & Alerting	Real-time monitoring of system health, performance metrics, P&L tracking, and alerting on anomalies.

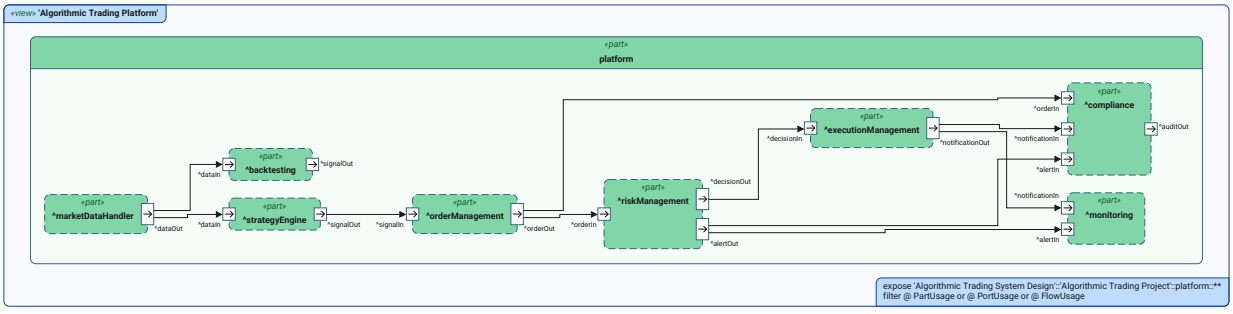


Figure 1: Flows between the platform components

Requirement catalog

Table 8: Requirement catalog

ID	Requirement	Statement
STKR-EXEC-001	Consistent risk-adjusted returns	System shall generate consistent risk-adjusted returns while maintaining regulatory compliance.
STKR-EXEC-002	Financial regulation compliance	System shall comply with all applicable financial regulations including MiFID II and SEC requirements.
STKR-EXEC-003	Catastrophic loss prevention	System shall prevent catastrophic losses through automated risk controls, position monitors, and circuit breakers.
STKR-USER-001	Strategy backtesting	Trading team shall be able to backtest strategies on historical market data with realistic execution simulation.
STKR-USER-002	Strategy deployment	Trading team shall be able to deploy strategies to production with configurable risk parameters.
STKR-USER-003	Real-time strategy monitoring	Trading team shall be able to monitor strategy performance in real-time with P&L tracking.
STKR-USER-004	Strategy halt and modification	Trading team shall be able to halt or modify strategies based on changing market conditions.
STKR-USER-005	Low-latency trading	Trading team shall be able to trade on real-time market data from multiple exchanges with execution speed and availability competitive with other market participants.
STKR-RISK-001	Position limit enforcement	System shall enforce position limits per strategy, instrument, and aggregate portfolio.
STKR-RISK-002	Daily loss limit halt	System shall monitor P&L in real-time and halt trading when daily loss limits are breached.
STKR-RISK-003	Pre-trade risk checks	System shall perform pre-trade risk checks on all orders before submission to exchanges.
STKR-RISK-004	Erroneous order prevention	System shall detect and prevent erroneous orders such as fat-finger errors and duplicate submissions.
STKR-RISK-005	Emergency kill switch	Risk managers shall have access to emergency kill switch to immediately halt all automated trading.
STKR-COMP-001	Immutable audit trail	System shall maintain complete, immutable audit trail of all trading activity with nanosecond timestamps.
STKR-COMP-002	Regulatory reporting	System shall generate regulatory reports compliant with MiFID II transaction reporting and SEC audit trail requirements.
STKR-COMP-003	Market abuse surveillance	System shall monitor trading activity for potential market abuse patterns including wash trades and layering.
STKR-COMP-004	Best execution enforcement	System shall enforce best execution requirements by monitoring execution quality across venues.
SYS-PERF-001	Market data latency	System shall process market data with end-to-end latency less than 1 millisecond from exchange feed to strategy.

ID	Requirement	Statement
SYS-PERF-002	Order submission latency	System shall submit orders with latency less than 1 millisecond from signal generation to exchange.
SYS-PERF-003	Order throughput	System shall handle throughput exceeding 100,000 orders per second.
SYS-PERF-004	Market hours uptime	System shall maintain 99.99% uptime during market hours.
SYS-FUNC-001	Multi-exchange market data ingestion	System shall ingest real-time market data from multiple exchanges simultaneously.
SYS-FUNC-002	Market data normalization	System shall normalize market data across different exchange formats into unified representation.
SYS-FUNC-003	Order lifecycle tracking	System shall track complete order lifecycle including submission, acknowledgment, fills, and cancellations.
SYS-FUNC-004	Real-time P&L calculation	System shall calculate real-time P&L across all positions with mark-to-market pricing.
SYS-FUNC-005	Historical market data replay	System shall replay historical market data through strategies with simulated order execution including slippage and market impact.
SYS-FUNC-006	Strategy deployment with risk parameters	System shall deploy strategies to production with their configured risk parameters applied before the first order is generated.
SYS-FUNC-007	Strategy halt and modification commands	System shall halt or modify a running strategy on operator command.
SYS-RISK-001	Maximum order size limit	System shall enforce maximum order size limits before order submission.
SYS-RISK-002	Maximum position limit	System shall enforce maximum position limits per instrument before accepting new orders.
SYS-RISK-003	Order price deviation check	System shall reject orders with prices beyond configurable percentage from current market price.
SYS-RISK-004	Duplicate order blocking	System shall detect and block duplicate order submissions within configurable time window.
SYS-RISK-005	Kill switch trading halt	System shall halt all trading and cancel pending orders within 100 milliseconds when kill switch activated.
SYS-RISK-006	Strategy correlation alerts	System shall alert risk managers when correlation between strategies exceeds configured thresholds.
SYS-RISK-007	Daily loss limit halt	System shall halt trading when realized and unrealized losses breach the configured daily loss limit.
SYS-COMP-001	Order parameter logging	System shall log all order parameters including timestamps, prices, quantities for regulatory reporting.
SYS-COMP-002	Best execution monitoring	System shall implement best execution monitoring by comparing execution prices against market benchmarks.
SYS-COMP-003	Restricted list enforcement	System shall prevent trading in securities on restricted lists maintained by compliance.
SYS-COMP-004	Transaction report generation	System shall generate MiFID II transaction reports and SEC audit trail records from logged order data.

ID	Requirement	Statement
SYS-COMP-005	Market abuse pattern detection	System shall detect wash trade and layering patterns in trading activity and alert the compliance team.

Executive Stakeholder Requirements

STKR-EXEC-001 Consistent risk-adjusted returns

Requirement details

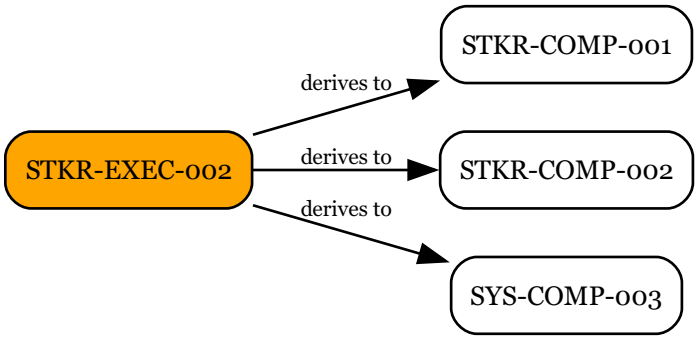
Description	System shall generate consistent risk-adjusted returns while maintaining regulatory compliance.
Justification	Primary business objective to deliver value to investors while managing operational and regulatory risk.
Success criteria	Achieve minimum Sharpe ratio of 2.0 over rolling 12-month periods with zero regulatory violations.
Stakeholders	• TradingFirm (owner) • ExecutiveManagement (approver) • Investor (investor)
Sources	
Parent requirements	
Derived requirements	
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-EXEC-001
Status	Open

STKR-EXEC-002 Financial regulation compliance

Requirement details

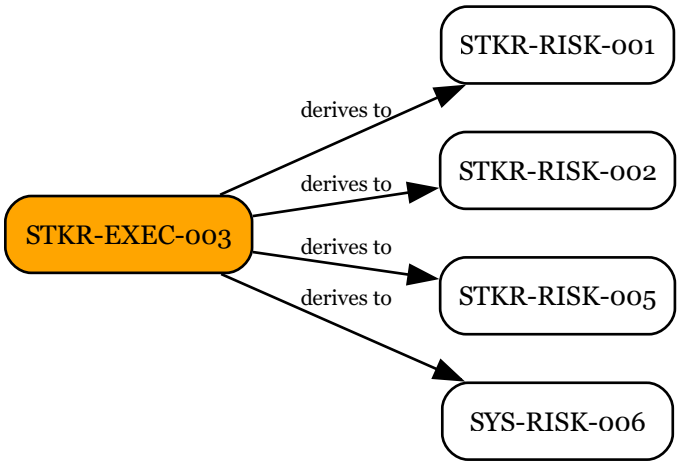
Description	System shall comply with all applicable financial regulations including MiFID II and SEC requirements.
Justification	Legal obligation to operate in regulated markets and avoid fines, sanctions, or license revocation.
Success criteria	Pass all regulatory audits with no major findings and maintain trading authorization across all target markets.
Stakeholders	• TradingFirm (owner) • ExecutiveManagement (approver)
Sources	MiFID-II, SEC-Rule-15c3-5, FINRA-Rules, Regulation-NMS
Parent requirements	
Derived requirements	STKR-COMP-001, STKR-COMP-002, SYS-COMP-003
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-EXEC-002
Status	Closed

STKR-EXEC-003 Catastrophic loss prevention

Requirement details

Description	System shall prevent catastrophic losses through automated risk controls, position monitors, and circuit breakers.
Justification	Protect firm capital and prevent business-ending losses as seen in historical algorithmic trading failures.
Success criteria	Less than 0.1% trading incidents resulting in losses exceeding daily loss limits or requiring manual intervention.
Stakeholders	• TradingFirm (owner) • ExecutiveManagement (approver)
Sources	
Parent requirements	
Derived requirements	STKR-RISK-001, STKR-RISK-002, STKR-RISK-005, SYS-RISK-006
Dependency graph	

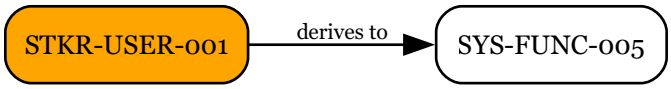
Verification details

Satisfied by	platform
Verified by	TEST-STKR-EXEC-003
Status	Open

Trading Team Requirements

STKR-USER-001 Strategy backtesting

Requirement details

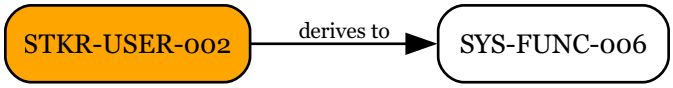
Description	Trading team shall be able to backtest strategies on historical market data with realistic execution simulation.
Justification	Validate strategy profitability and risk characteristics before deployment to avoid losses from untested algorithms.
Success criteria	Backtesting environment produces results within 5% of actual live trading performance over 3-month validation.
Stakeholders	• QuantitativeTrader (owner)
Sources	
Parent requirements	
Derived requirements	SYS-FUNC-005
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-USER-001
Status	Closed

STKR-USER-002 Strategy deployment

Requirement details

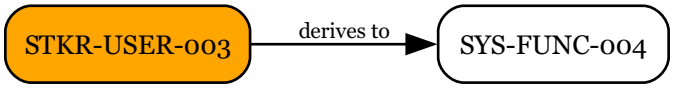
Description	Trading team shall be able to deploy strategies to production with configurable risk parameters.
Justification	Enable rapid strategy iteration and deployment while maintaining risk oversight and control.
Success criteria	Strategies deploy to production within 10 minutes with all risk parameters correctly applied and verified.
Stakeholders	• QuantitativeTrader (owner)
Sources	
Parent requirements	
Derived requirements	SYS-FUNC-006
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-USER-002
Status	Closed

STKR-USER-003 Real-time strategy monitoring

Requirement details

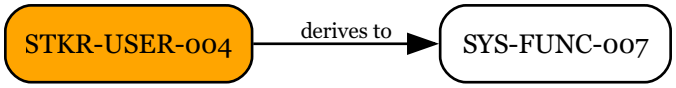
Description	Trading team shall be able to monitor strategy performance in real-time with P&L tracking.
Justification	Enables prompt response to performance degradation or changing market conditions to protect capital.
Success criteria	P&L updates display with < 1 second latency and dashboards remain accessible during all market conditions.
Stakeholders	• QuantitativeTrader (owner)
Sources	
Parent requirements	
Derived requirements	SYS-FUNC-004
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-USER-003
Status	Closed

STKR-USER-004 Strategy halt and modification

Requirement details

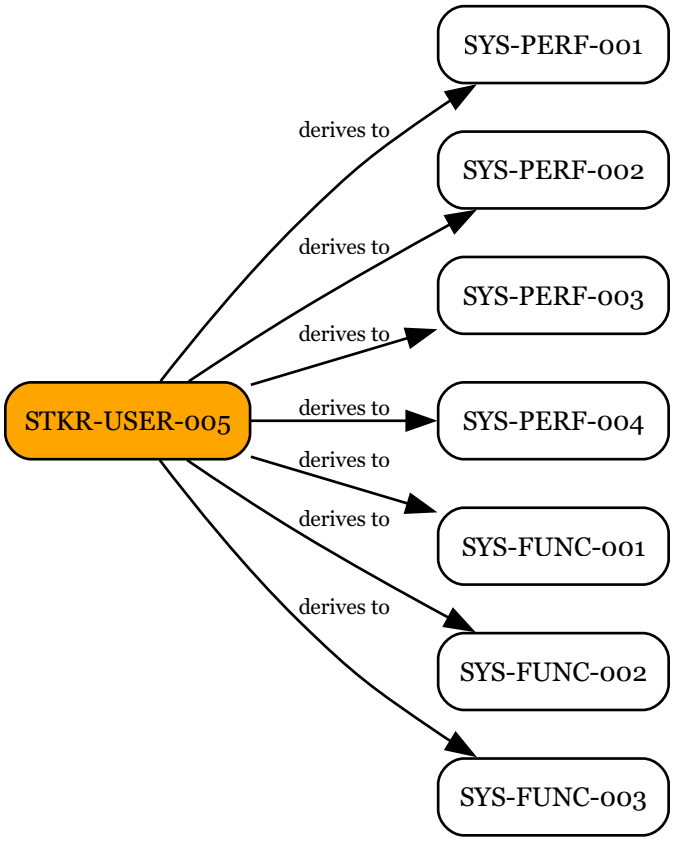
Description	Trading team shall be able to halt or modify strategies based on changing market conditions.
Justification	Market conditions change rapidly; manual override capability is essential for risk management.
Success criteria	Strategy halt commands execute within 500 milliseconds with confirmation displayed to operator.
Stakeholders	• QuantitativeTrader (owner)
Sources	
Parent requirements	
Derived requirements	SYS-FUNC-007
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-USER-004
Status	Closed

STKR-USER-005 Low-latency trading

Requirement details

Description	Trading team shall be able to trade on real-time market data from multiple exchanges with execution speed and availability competitive with other market participants.
Justification	Strategy returns depend on acting on market data before prices move.
Success criteria	Market data to order submission within 2 milliseconds at the 99th percentile, available throughout market hours on all connected exchanges.
Stakeholders	• QuantitativeTrader (owner)
Sources	
Parent requirements	
Derived requirements	SYS-PERF-001, SYS-PERF-002, SYS-PERF-003, SYS-PERF-004, SYS-FUNC-001, SYS-FUNC-002, SYS-FUNC-003
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-USER-005
Status	Open

Risk Management Requirements

STKR-RISK-001 Position limit enforcement

Requirement details

Description	System shall enforce position limits per strategy, instrument, and aggregate portfolio.
Justification	Prevent concentration risk and limit exposure to individual instruments or strategies.
Success criteria	100% of orders exceeding position limits are rejected before submission to market.
Stakeholders	• RiskManager (owner)
Sources	
Parent requirements	STKR-EXEC-003
Derived requirements	SYS-RISK-001, SYS-RISK-002
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-RISK-001
Status	Closed

STKR-RISK-002 Daily loss limit halt

Requirement details

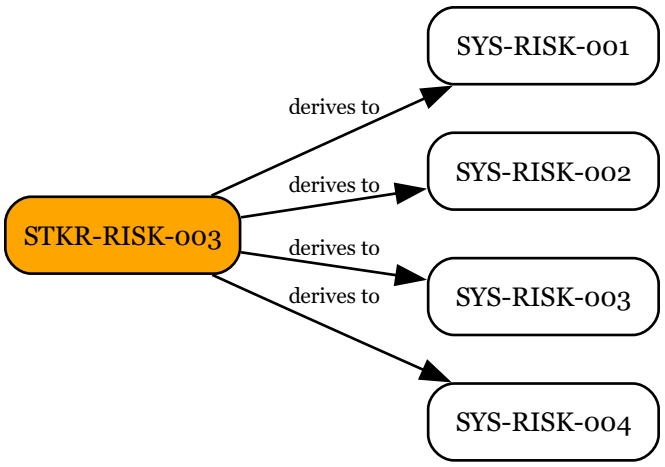
Description	System shall monitor P&L in real-time and halt trading when daily loss limits are breached.
Justification	Cap maximum daily losses to prevent drawdowns that exceed risk tolerance or threaten firm viability.
Success criteria	Loss limit breach detection and trading halt occurs within 100 milliseconds.
Stakeholders	• RiskManager (owner)
Sources	
Parent requirements	STKR-EXEC-003
Derived requirements	SYS-FUNC-004, SYS-RISK-007
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-RISK-002
Status	Closed

STKR-RISK-003 Pre-trade risk checks

Requirement details

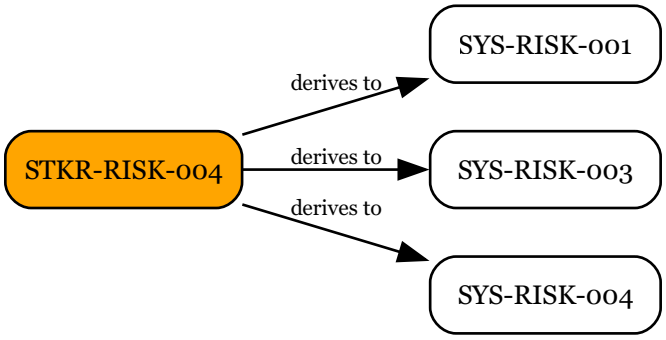
Description	System shall perform pre-trade risk checks on all orders before submission to exchanges.
Justification	Regulatory requirement and best practice to prevent erroneous orders from reaching market.
Success criteria	Pre-trade checks complete with < 50 microseconds latency and 100% of orders are validated before submission.
Stakeholders	• RiskManager (owner)
Sources	SEC-Rule-15c3-5
Parent requirements	
Derived requirements	SYS-RISK-001, SYS-RISK-002, SYS-RISK-003, SYS-RISK-004
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-RISK-003
Status	Closed

STKR-RISK-004 Erroneous order prevention

Requirement details

Description	System shall detect and prevent erroneous orders such as fat-finger errors and duplicate submissions.
Justification	Prevent costly trading errors that can result in significant losses and market disruption.
Success criteria	Detect and reject 100% of orders with quantities >3 standard deviations from historical mean for that strategy.
Stakeholders	• RiskManager (owner)
Sources	
Parent requirements	
Derived requirements	SYS-RISK-001, SYS-RISK-003, SYS-RISK-004
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-RISK-004
Status	Closed

STKR-RISK-005 Emergency kill switch

Requirement details

Description	Risk managers shall have access to emergency kill switch to immediately halt all automated trading.
Justification	Final safeguard for extreme situations requiring immediate cessation of all trading activity.
Success criteria	Kill switch activates within 100 milliseconds and cancels all pending orders.
Stakeholders	• RiskManager (owner)
Sources	
Parent requirements	STKR-EXEC-003
Derived requirements	SYS-RISK-005
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-RISK-005
Status	Closed

Compliance Team Requirements

STKR-COMP-001 Immutable audit trail

Requirement details

Description	System shall maintain complete, immutable audit trail of all trading activity with nanosecond timestamps.
Justification	Required for regulatory audits and post-trade analysis.
Success criteria	Audit trail captures 100% of trading events with timestamp accuracy ±100 nanoseconds and zero data loss.
Stakeholders	• ComplianceOfficer (owner) • Regulator (regulator)
Sources	
Parent requirements	STKR-EXEC-002
Derived requirements	SYS-COMP-001
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-COMP-001
Status	Closed

STKR-COMP-002 Regulatory reporting

Requirement details

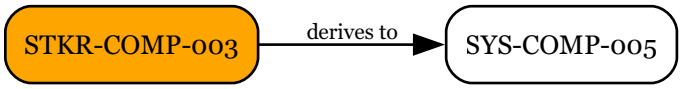
Description	System shall generate regulatory reports compliant with MiFID II transaction reporting and SEC audit trail requirements.
Justification	Legal obligation for market participants to report trading activity to regulators within specified timeframes.
Success criteria	Reports generated daily by T+1 deadline with 100% accuracy and zero regulatory rejections.
Stakeholders	• ComplianceOfficer (owner) • Regulator (regulator)
Sources	MiFID-II
Parent requirements	STKR-EXEC-002
Derived requirements	SYS-COMP-004
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-COMP-002
Status	Closed

STKR-COMP-003 Market abuse surveillance

Requirement details

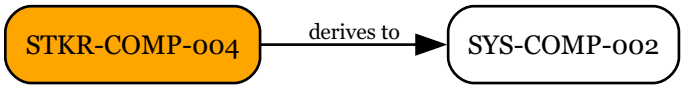
Description	System shall monitor trading activity for potential market abuse patterns including wash trades and layering.
Justification	Prevent market manipulation and ensure compliance with market conduct regulations to avoid penalties.
Success criteria	Surveillance system flags 95% of known market abuse patterns with <1% false positive rate.
Stakeholders	• ComplianceOfficer (owner) • Regulator (regulator)
Sources	FINRA-Rules
Parent requirements	
Derived requirements	SYS-COMP-005
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-STKR-COMP-003
Status	Closed

STKR-COMP-004 Best execution enforcement

Requirement details

Description	System shall enforce best execution requirements by monitoring execution quality across venues.
Justification	Regulatory obligation to obtain best possible execution for client orders and demonstrate due diligence.
Success criteria	Execution quality within top quartile of industry benchmarks with documented venue selection rationale.
Stakeholders	• ComplianceOfficer (owner) • Regulator (regulator)
Sources	Regulation-NMS
Parent requirements	
Derived requirements	SYS-COMP-002
Dependency graph	

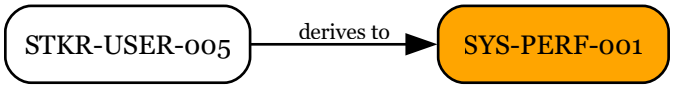
Verification details

Satisfied by	platform
Verified by	TEST-STKR-COMP-004
Status	Closed

Performance Requirements

SYS-PERF-001 Market data latency

Requirement details

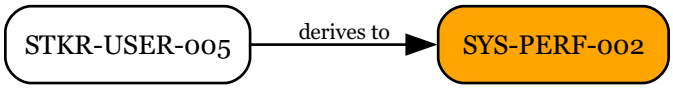
Description	System shall process market data with end-to-end latency less than 1 millisecond from exchange feed to strategy.
Justification	Low latency is critical for competitive advantage in high-frequency trading and market-making strategies.
Success criteria	99.9th percentile latency measured at <1ms during normal market conditions.
Stakeholders	
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	marketDataHandler
Verified by	TEST-SYS-PERF-001
Status	Closed

SYS-PERF-002 Order submission latency

Requirement details

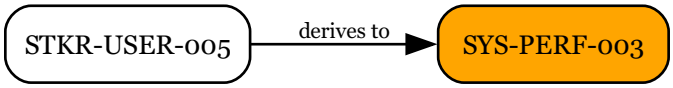
Description	System shall submit orders with latency less than 1 millisecond from signal generation to exchange.
Justification	Minimize slippage and maximize probability of execution at desired prices in fast-moving markets.
Success criteria	Mean order submission latency <500 microseconds with 99th percentile <1ms measured via hardware timestamps.
Stakeholders	
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-SYS-PERF-002
Status	Closed

SYS-PERF-003 Order throughput

Requirement details

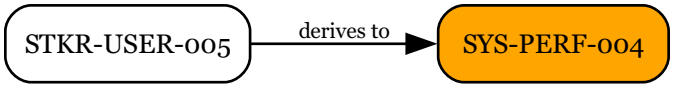
Description	System shall handle throughput exceeding 100,000 orders per second.
Justification	Support high-frequency strategies and market-making across multiple instruments simultaneously.
Success criteria	Sustained throughput of 100,000 orders/second with no message loss and latency degradation <10%.
Stakeholders	
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	platform
Verified by	TEST-SYS-PERF-003
Status	Closed

SYS-PERF-004 Market hours uptime

Requirement details

Description	System shall maintain 99.99% uptime during market hours.
Justification	Downtime results in missed trading opportunities and potential failure to meet market-making obligations.
Success criteria	Maximum unplanned downtime of 5 minutes per month during trading hours.
Stakeholders	• TechnologyTeam (maintainer)
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

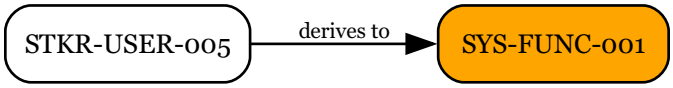
Verification details

Satisfied by	platform
Verified by	TEST-SYS-PERF-004
Status	Open

Functional Requirements

SYS-FUNC-001 Multi-exchange market data ingestion

Requirement details

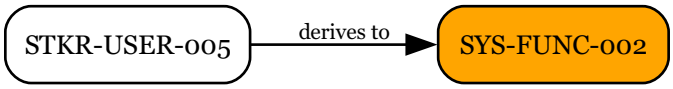
Description	System shall ingest real-time market data from multiple exchanges simultaneously.
Justification	Access to multiple venues enables arbitrage opportunities and best execution across markets.
Success criteria	Simultaneous connection to minimum 5 exchanges with no data gaps >100ms during market hours.
Stakeholders	
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	marketDataHandler
Verified by	TEST-SYS-FUNC-001
Status	Closed

SYS-FUNC-002 Market data normalization

Requirement details

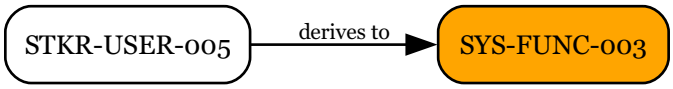
Description	System shall normalize market data across different exchange formats into unified representation.
Justification	Unified data format simplifies strategy development and enables cross-venue analysis and trading.
Success criteria	All supported exchanges mapped to common schema with 100% field accuracy validated against exchange specs.
Stakeholders	
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	marketDataHandler
Verified by	TEST-SYS-FUNC-002
Status	Closed

SYS-FUNC-003 Order lifecycle tracking

Requirement details

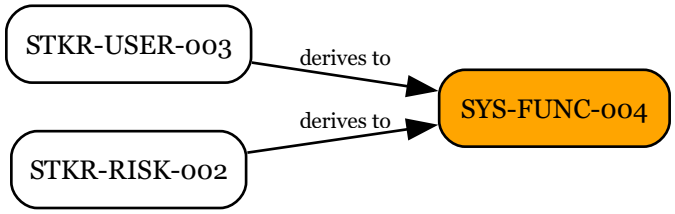
Description	System shall track complete order lifecycle including submission, acknowledgment, fills, and cancellations.
Justification	Accurate order state tracking is essential for position management, risk control, and regulatory compliance.
Success criteria	Order state transitions tracked with 100% accuracy and reconciliation discrepancies <0.01% of total orders.
Stakeholders	
Sources	
Parent requirements	STKR-USER-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	orderManagement
Verified by	TEST-SYS-FUNC-003
Status	Closed

SYS-FUNC-004 Real-time P&L calculation

Requirement details

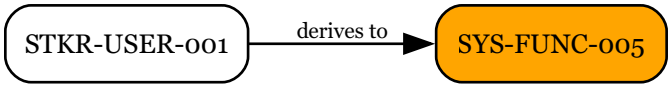
Description	System shall calculate real-time P&L across all positions with mark-to-market pricing.
Justification	Real-time P&L enables intraday risk management and supports loss limit monitoring requirements.
Success criteria	P&L calculations update within 100ms of price changes with accuracy ±0.1% vs end-of-day reconciliation.
Stakeholders	
Sources	
Parent requirements	STKR-USER-003, STKR-RISK-002
Derived requirements	
Dependency graph	

Verification details

Satisfied by	monitoring
Verified by	TEST-SYS-FUNC-004
Status	Closed

SYS-FUNC-005 Historical market data replay

Requirement details

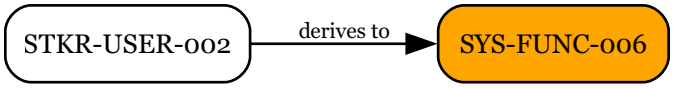
Description	System shall replay historical market data through strategies with simulated order execution including slippage and market impact.
Justification	Enables strategy validation before production deployment.
Success criteria	Backtest results within 5% of live trading performance over a 3-month validation period.
Stakeholders	
Sources	
Parent requirements	STKR-USER-001
Derived requirements	
Dependency graph	

Verification details

Satisfied by	backtesting
Verified by	TEST-SYS-FUNC-005
Status	Open

SYS-FUNC-006 Strategy deployment with risk parameters

Requirement details

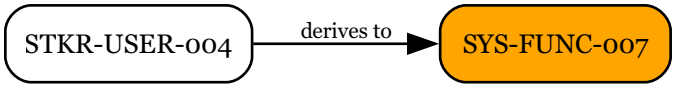
Description	System shall deploy strategies to production with their configured risk parameters applied before the first order is generated.
Justification	Prevents strategies from trading without their intended risk limits.
Success criteria	Strategies deploy within 10 minutes with all risk parameters applied and verified.
Stakeholders	
Sources	
Parent requirements	STKR-USER-002
Derived requirements	
Dependency graph	

Verification details

Satisfied by	strategyEngine
Verified by	TEST-SYS-FUNC-006
Status	Open

SYS-FUNC-007 Strategy halt and modification commands

Requirement details

Description	System shall halt or modify a running strategy on operator command.
Justification	Lets traders react to changing market conditions.
Success criteria	Strategy halt commands execute within 500 milliseconds with confirmation displayed to operator.
Stakeholders	
Sources	
Parent requirements	STKR-USER-004
Derived requirements	
Dependency graph	

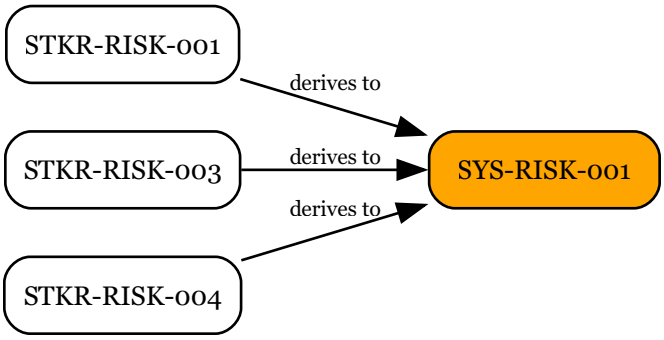
Verification details

Satisfied by	strategyEngine
Verified by	TEST-SYS-FUNC-007
Status	Open

Risk Control Requirements

SYS-RISK-001 Maximum order size limit

Requirement details

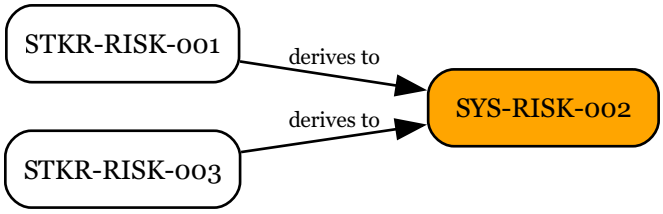
Description	System shall enforce maximum order size limits before order submission.
Justification	Prevent single large orders from causing excessive market impact or unintended exposure.
Success criteria	100% of orders exceeding configured size limits are rejected with detailed error message.
Stakeholders	
Sources	
Parent requirements	STKR-RISK-001, STKR-RISK-003, STKR-RISK-004
Derived requirements	
Dependency graph	

Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-001
Status	Closed

SYS-RISK-002 Maximum position limit

Requirement details

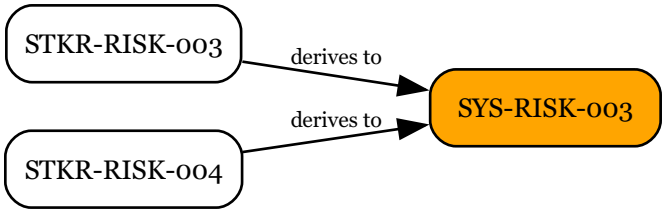
Description	System shall enforce maximum position limits per instrument before accepting new orders.
Justification	Technical implementation of position limit risk controls derived from stakeholder risk requirements.
Success criteria	Position limits checked on every order with <10 microseconds latency and zero bypasses.
Stakeholders	
Sources	
Parent requirements	STKR-RISK-001, STKR-RISK-003
Derived requirements	
Dependency graph	

Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-002
Status	Closed

SYS-RISK-003 Order price deviation check

Requirement details

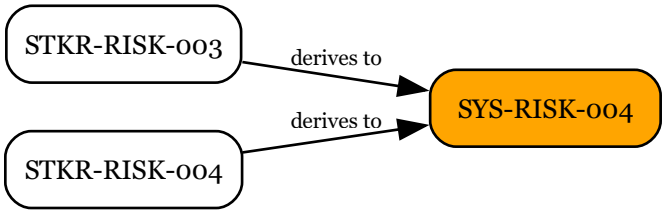
Description	System shall reject orders with prices beyond configurable percentage from current market price.
Justification	Prevents erroneous orders from impacting market.
Success criteria	100% of orders priced beyond the configured percentage from current market price are rejected before submission.
Stakeholders	
Sources	
Parent requirements	STKR-RISK-003, STKR-RISK-004
Derived requirements	
Dependency graph	

Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-003
Status	Closed

SYS-RISK-004 Duplicate order blocking

Requirement details

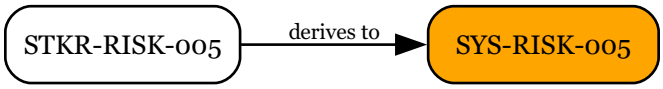
Description	System shall detect and block duplicate order submissions within configurable time window.
Justification	Prevent accidental double-fills from software errors or network retransmissions that could double intended exposure.
Success criteria	Duplicate detection catches 100% of identical orders within 500ms window with no false positives.
Stakeholders	
Sources	
Parent requirements	STKR-RISK-003, STKR-RISK-004
Derived requirements	
Dependency graph	

Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-004
Status	Closed

SYS-RISK-005 Kill switch trading halt

Requirement details

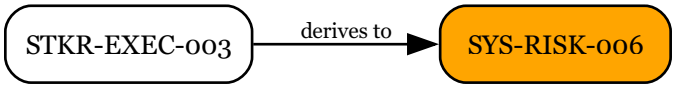
Description	System shall halt all trading and cancel pending orders within 100 milliseconds when kill switch activated.
Justification	Technical implementation of emergency kill switch capability required by risk management stakeholders.
Success criteria	Complete trading halt within 100ms with confirmation of all order cancellations received from exchanges.
Stakeholders	
Sources	
Parent requirements	STKR-RISK-005
Derived requirements	
Dependency graph	

Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-005
Status	Closed

SYS-RISK-006 Strategy correlation alerts

Requirement details

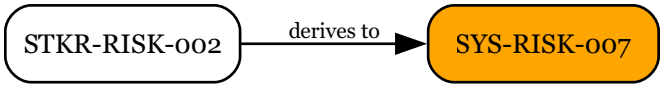
Description	System shall alert risk managers when correlation between strategies exceeds configured thresholds.
Justification	Detect hidden concentration risk from strategies that appear independent but move together.
Success criteria	Correlation alerts triggered within 30 seconds of threshold breach with affected strategy pairs identified.
Stakeholders	
Sources	
Parent requirements	STKR-EXEC-003
Derived requirements	
Dependency graph	

Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-006
Status	Open

SYS-RISK-007 Daily loss limit halt

Requirement details

Description	System shall halt trading when realized and unrealized losses breach the configured daily loss limit.
Justification	Caps daily losses at the level approved by risk management.
Success criteria	Loss limit breach detection and trading halt occurs within 100 milliseconds.
Stakeholders	
Sources	
Parent requirements	STKR-RISK-002
Derived requirements	
Dependency graph	

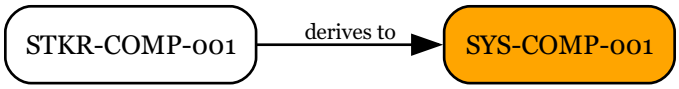
Verification details

Satisfied by	riskManagement
Verified by	TEST-SYS-RISK-007
Status	Open

Compliance Requirements

SYS-COMP-001 Order parameter logging

Requirement details

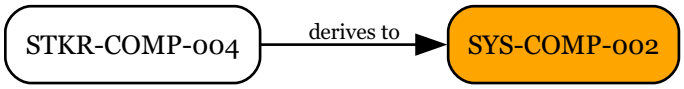
Description	System shall log all order parameters including timestamps, prices, quantities for regulatory reporting.
Justification	Technical implementation of audit trail requirements for regulatory compliance and investigation support.
Success criteria	All mandatory fields per MiFID II/SEC rules logged with zero data loss and tamper-evident storage.
Stakeholders	
Sources	MiFID-II
Parent requirements	STKR-COMP-001
Derived requirements	
Dependency graph	

Verification details

Satisfied by	compliance
Verified by	TEST-SYS-COMP-001
Status	Closed

SYS-COMP-002 Best execution monitoring

Requirement details

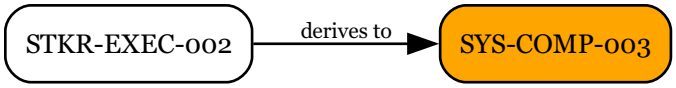
Description	System shall implement best execution monitoring by comparing execution prices against market benchmarks.
Justification	Demonstrate compliance with best execution obligations through objective measurement and documentation.
Success criteria	Execution quality metrics calculated for 100% of trades with benchmarks (VWAP, arrival price) within 1 minute.
Stakeholders	
Sources	
Parent requirements	STKR-COMP-004
Derived requirements	
Dependency graph	

Verification details

Satisfied by	executionManagement
Verified by	TEST-SYS-COMP-002
Status	Closed

SYS-COMP-003 Restricted list enforcement

Requirement details

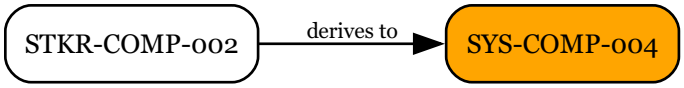
Description	System shall prevent trading in securities on restricted lists maintained by compliance.
Justification	Enforce trading restrictions to prevent conflicts of interest, insider trading, and regulatory violations.
Success criteria	100% of orders in restricted securities blocked before submission with alerts to compliance team.
Stakeholders	
Sources	
Parent requirements	STKR-EXEC-002
Derived requirements	
Dependency graph	

Verification details

Satisfied by	compliance
Verified by	TEST-SYS-COMP-003
Status	Closed

SYS-COMP-004 Transaction report generation

Requirement details

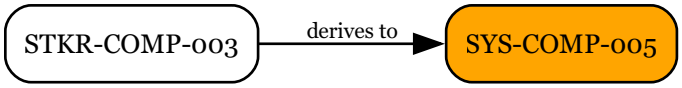
Description	System shall generate MiFID II transaction reports and SEC audit trail records from logged order data.
Justification	Regulatory reporting is a legal obligation in all target markets.
Success criteria	Reports generated daily by T+1 deadline with 100% accuracy and zero regulatory rejections.
Stakeholders	
Sources	MiFID-II
Parent requirements	STKR-COMP-002
Derived requirements	
Dependency graph	

Verification details

Satisfied by	compliance
Verified by	TEST-SYS-COMP-004
Status	Open

SYS-COMP-005 Market abuse pattern detection

Requirement details

Description	System shall detect wash trade and layering patterns in trading activity and alert the compliance team.
Justification	Firms are required to surveil their own trading for market abuse.
Success criteria	Surveillance flags 95% of known market abuse patterns with <1% false positive rate.
Stakeholders	
Sources	
Parent requirements	STKR-COMP-003
Derived requirements	
Dependency graph	

Verification details

Satisfied by	compliance
Verified by	TEST-SYS-COMP-005
Status	Open

Verification matrix

The procedure and success criteria of each test case are given in Verification execution.

Table 9: Verification cross-reference matrix

Requirement	Methods	Test case	Environment	Status
STKR-EXEC-001	Analysis, Test	TEST-STKR-EXEC-001		Open
STKR-EXEC-002	Analysis	TEST-STKR-EXEC-002		Closed
STKR-EXEC-003	Analysis	TEST-STKR-EXEC-003		Open
STKR-USER-001	Test, Analysis	TEST-STKR-USER-001	Market Simulator	Closed
STKR-USER-002	Test	TEST-STKR-USER-002	Market Simulator	Closed
STKR-USER-003	Test, Analysis	TEST-STKR-USER-003	Market Simulator	Closed
STKR-USER-004	Demonstration	TEST-STKR-USER-004		Closed
STKR-USER-005	Test	TEST-STKR-USER-005	Production-like Staging	Open
STKR-RISK-001	Test	TEST-STKR-RISK-001	Market Simulator	Closed
STKR-RISK-002	Test	TEST-STKR-RISK-002	Production-like Staging	Closed
STKR-RISK-003	Test	TEST-STKR-RISK-003	Market Simulator	Closed
STKR-RISK-004	Test	TEST-STKR-RISK-004	Market Simulator	Closed
STKR-RISK-005	Test	TEST-STKR-RISK-005	Production-like Staging	Closed
STKR-COMP-001	Inspection, Analysis	TEST-STKR-COMP-001	Auditor	Closed
STKR-COMP-002	Inspection, Analysis	TEST-STKR-COMP-002	Auditor	Closed
STKR-COMP-003	Test, Analysis	TEST-STKR-COMP-003	Market Simulator	Closed
STKR-COMP-004	Test, Analysis	TEST-STKR-COMP-004	Market Simulator	Closed
SYS-PERF-001	Test, Analysis	TEST-SYS-PERF-001	Production-like Staging	Closed
SYS-PERF-002	Test, Analysis	TEST-SYS-PERF-002	Production-like Staging	Closed
SYS-PERF-003	Test, Analysis	TEST-SYS-PERF-003	Production-like Staging	Closed
SYS-PERF-004	Test, Analysis	TEST-SYS-PERF-004	Production-like Staging	Open
SYS-FUNC-001	Test	TEST-SYS-FUNC-001	Exchange Test Environment	Closed
SYS-FUNC-002	Test	TEST-SYS-FUNC-002	Market Simulator	Closed
SYS-FUNC-003	Test	TEST-SYS-FUNC-003	Exchange Test Environment	Closed
SYS-FUNC-004	Test	TEST-SYS-FUNC-004	Market Simulator	Closed
SYS-FUNC-005	Test, Analysis	TEST-SYS-FUNC-005	Market Simulator	Open
SYS-FUNC-006	Test	TEST-SYS-FUNC-006	Market Simulator	Open
SYS-FUNC-007	Test	TEST-SYS-FUNC-007	Market Simulator	Open
SYS-RISK-001	Test	TEST-SYS-RISK-001	Market Simulator	Closed

Requirement	Methods	Test case	Environment	Status
SYS-RISK-002	Test	TEST-SYS-RISK-002	Market Simulator	Closed
SYS-RISK-003	Test	TEST-SYS-RISK-003	Market Simulator	Closed
SYS-RISK-004	Test	TEST-SYS-RISK-004	Market Simulator	Closed
SYS-RISK-005	Test	TEST-SYS-RISK-005	Production-like Staging	Closed
SYS-RISK-006	Test	TEST-SYS-RISK-006	Market Simulator	Open
SYS-RISK-007	Test	TEST-SYS-RISK-007	Production-like Staging	Open
SYS-COMP-001	Inspection, Analysis	TEST-SYS-COMP-001	Auditor	Closed
SYS-COMP-002	Test, Analysis	TEST-SYS-COMP-002	Market Simulator	Closed
SYS-COMP-003	Test	TEST-SYS-COMP-003	Market Simulator	Closed
SYS-COMP-004	Inspection, Analysis	TEST-SYS-COMP-004	Auditor	Open
SYS-COMP-005	Test	TEST-SYS-COMP-005	Market Simulator	Open

Verification execution

Verdicts are summarized in Close-out status.

Executive Stakeholder Requirement Verification

TEST-STKR-EXEC-001

Verifies	STKR-EXEC-001
Approach	RequiresValidation
Methods	Analysis, Test
Environment	
Procedure	Risk-adjusted returns can only be validated through extended live trading. Pre-production verification limited to backtesting and paper trading validation of strategy logic and risk controls.
Success criteria	
Decomposed into	
Verdict	Inconclusive

TEST-STKR-EXEC-002

Verifies	STKR-EXEC-002
Approach	Decomposed
Methods	Analysis
Environment	
Procedure	
Success criteria	
Decomposed into	TEST-STKR-COMP-001, TEST-STKR-COMP-002, TEST-SYS-COMP-003
Verdict	Pass

TEST-STKR-EXEC-003

Verifies	STKR-EXEC-003
Approach	Decomposed
Methods	Analysis
Environment	
Procedure	
Success criteria	

Verifies	STKR-EXEC-003
Decomposed into	TEST-STKR-RISK-001, TEST-STKR-RISK-002, TEST-STKR-RISK-005, TEST-SYS-RISK-006
Verdict	Inconclusive

Trading Team Requirement Verification

TEST-STKR-USER-001

Verifies	STKR-USER-001
Approach	UsesBacktest
Methods	Test, Analysis
Environment	Market Simulator
Procedure	Verify backtesting capability by: 1. Loading multi-year historical data for relevant instruments. 2. Running sample strategies with realistic execution assumptions. 3. Validating performance metrics (Sharpe, max drawdown, etc.). 4. Comparing results against known benchmark strategies.
Success criteria	Backtesting engine produces consistent results with realistic fill modeling, handles corporate actions correctly, and generates standard performance analytics.
Decomposed into	
Verdict	Pass

TEST-STKR-USER-002

Verifies	STKR-USER-002
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify strategy deployment by: 1. Configuring strategy with parameters and risk limits. 2. Deploying to test environment with market simulator. 3. Validating parameter enforcement through limit testing. 4. Testing enable/disable and modification procedures.
Success criteria	Strategies deploy successfully with correct parameter application, risk limits are enforced, and operational controls function as expected.
Decomposed into	
Verdict	Pass

TEST-STKR-USER-003

Verifies	STKR-USER-003
Approach	UsesIntegrationTest
Methods	Test, Analysis
Environment	Market Simulator
Procedure	Verify monitoring capability by: 1. Simulating orders and fills across multiple strategies. 2. Validating real-time P&L calculations against independent computation. 3. Testing monitoring dashboard updates and alerting. 4. Validating position reconciliation and risk metrics.
Success criteria	P&L calculations match independent verification within 0.01%, monitoring updates occur within 100ms of events, and all positions reconcile correctly.
Decomposed into	
Verdict	Pass

TEST-STKR-USER-004

Verifies	STKR-USER-004
Approach	UsesManualTest
Methods	Demonstration
Environment	
Procedure	Verify strategy control by: 1. Testing halt procedures while strategies are active. 2. Modifying parameters during runtime and validating application. 3. Testing order cancellation during halt. 4. Validating control latency under various system loads.
Success criteria	Strategy controls respond within 100ms, pending orders are handled according to policy, and parameter changes take effect immediately without restarting strategies.
Decomposed into	
Verdict	Pass

TEST-STKR-USER-005

Verifies	STKR-USER-005
Approach	UsesLatencyBenchmark
Methods	Test
Environment	Production-like Staging
Procedure	

Verifies	STKR-USER-005
	Verify low-latency trading by measuring the time from market data receipt to order submission on each connected exchange under realistic message rates during market hours.
Success criteria	
Decomposed into	
Verdict	Not run

Risk Management Requirement Verification

TEST-STKR-RISK-001

Verifies	STKR-RISK-001
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify position limit enforcement by: 1. Configuring limits at strategy, instrument, and portfolio levels. 2. Submitting orders designed to violate each limit type. 3. Validating 100% rejection of violating orders. 4. Testing aggregate position calculation across strategies.
Success criteria	All orders exceeding configured limits are rejected before market submission, with appropriate logging and alerting.
Decomposed into	
Verdict	Pass

TEST-STKR-RISK-002

Verifies	STKR-RISK-002
Approach	UsesLatencyBenchmark
Methods	Test
Environment	Production-like Staging
Procedure	Verify loss limit breach detection by: 1. Configuring daily loss limits in test environment. 2. Simulating trading scenarios that breach limits. 3. Measuring detection latency with precision timing. 4. Validating trading halt propagation to all components.
Success criteria	Loss limit breaches detected within 100ms (99.9th percentile), all active strategies halt immediately, and no new orders accepted.
Decomposed into	
Verdict	Pass

TEST-STKR-RISK-003

Verifies	STKR-RISK-003
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify pre-trade risk checks by: 1. Submitting test orders through complete risk check pipeline. 2. Validating checks for size, price, position, concentration. 3. Testing various rejection scenarios and error handling. 4. Measuring pre-trade check latency contribution.
Success criteria	All orders undergo specified pre-trade checks, violations are blocked before exchange submission, and check latency remains within budget (<200µs).
Decomposed into	
Verdict	Pass

TEST-STKR-RISK-004

Verifies	STKR-RISK-004
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify erroneous order detection by: 1. Testing fat-finger detection (abnormal sizes and prices). 2. Testing duplicate order detection within configured window. 3. Validating detection accuracy and false positive rates. 4. Testing edge cases and boundary conditions.
Success criteria	Erroneous orders detected with >99.9% accuracy, false positive rate <0.1%, and detection does not introduce unacceptable latency.
Decomposed into	
Verdict	Pass

TEST-STKR-RISK-005

Verifies	STKR-RISK-005
Approach	UsesLatencyBenchmark
Methods	Test
Environment	Production-like Staging
Procedure	

Verifies	STKR-RISK-005
	Verify kill switch by: 1. Activating emergency halt during simulated trading. 2. Measuring latency to complete trading cessation. 3. Validating all pending orders are canceled. 4. Testing kill switch from multiple interfaces (UI, API, hardware).
Success criteria	Kill switch activates within 100ms (99.9th percentile), cancels all orders, halts all strategies, and prevents new submissions until explicitly re-enabled.
Decomposed into	
Verdict	Pass

Compliance Requirement Verification

TEST-STKR-COMP-001

Verifies	STKR-COMP-001
Approach	UsesComplianceAudit
Methods	Inspection, Analysis
Environment	Auditor
Procedure	Verify audit trail by: 1. Generating trading activity across all system components. 2. Validating all events logged with required attributes. 3. Checking timestamp precision and clock synchronization. 4. Testing audit trail immutability and integrity mechanisms. 5. Validating retention and retrieval capabilities.
Success criteria	100% of trading events captured in audit trail with nanosecond timestamps, immutability verified cryptographically, and audit trail passes compliance review.
Decomposed into	
Verdict	Pass

TEST-STKR-COMP-002

Verifies	STKR-COMP-002
Approach	UsesComplianceAudit
Methods	Inspection, Analysis
Environment	Auditor
Procedure	Verify regulatory reporting by: 1. Generating sample trading activity with known outcomes. 2. Producing MiFID II transaction reports (RTS 22). 3. Producing SEC CAT/OATS reports as applicable. 4. Validating report formats against regulatory schemas.

Verifies	STKR-COMP-002
	5. Testing report generation within required timeframes.
Success criteria	Generated reports validate against regulatory schemas, contain all required fields, meet timeliness requirements, and pass review by compliance consultants.
Decomposed into	
Verdict	Pass

TEST-STKR-COMP-003

Verifies	STKR-COMP-003
Approach	UsesIntegrationTest
Methods	Test, Analysis
Environment	Market Simulator
Procedure	Verify trade surveillance by: 1. Simulating known market abuse patterns (wash trades, layering, spoofing). 2. Validating surveillance algorithm detection. 3. Testing alert generation and escalation. 4. Measuring false positive and false negative rates.
Success criteria	Market abuse patterns detected with >95% sensitivity, false positive rate <5%, and alerts generated within configurable time windows.
Decomposed into	
Verdict	Pass

TEST-STKR-COMP-004

Verifies	STKR-COMP-004
Approach	UsesIntegrationTest
Methods	Test, Analysis
Environment	Market Simulator
Procedure	Verify best execution monitoring by: 1. Executing test orders across multiple venues in simulator. 2. Capturing execution quality metrics (fill price, venue, timing). 3. Computing benchmarks (VWAP, arrival price, implementation shortfall). 4. Validating monitoring reports and alerts.
Success criteria	Execution quality metrics collected for 100% of orders, benchmark calculations verified against independent computation, and reports suitable for regulatory review.
Decomposed into	
Verdict	Pass

Performance Requirement Verification

TEST-SYS-PERF-001

Verifies	SYS-PERF-001
Approach	UsesLatencyBenchmark
Methods	Test, Analysis
Environment	Production-like Staging
Procedure	Verify market data latency by: 1. Connecting to market data feed in test environment. 2. Timestamping data at multiple processing stages. 3. Measuring end-to-end latency from network ingress to strategy. 4. Collecting percentile statistics (50th, 99th, 99.9th). 5. Testing under realistic message rates for target instruments.
Success criteria	99.9th percentile latency <1ms measured from network arrival to strategy data availability under target message rates.
Decomposed into	
Verdict	Pass

TEST-SYS-PERF-002

Verifies	SYS-PERF-002
Approach	UsesLatencyBenchmark
Methods	Test, Analysis
Environment	Production-like Staging
Procedure	Verify order submission latency by: 1. Measuring time from signal generation to exchange gateway. 2. Including all processing stages (risk checks, routing, encoding). 3. Testing under various load conditions. 4. Validating latency budgets for each component.
Success criteria	99th percentile order submission latency <1ms from signal to gateway under normal operating conditions.
Decomposed into	
Verdict	Pass

TEST-SYS-PERF-003

Verifies	SYS-PERF-003
Approach	UsesLoadTest
Methods	Test, Analysis

Verifies	SYS-PERF-003
Environment	Production-like Staging
Procedure	Verify throughput capacity by: 1. Generating sustained load of >100K orders/second. 2. Measuring system throughput and latency under load. 3. Monitoring resource utilization (CPU, memory, network, I/O). 4. Testing sustained load and burst scenarios. 5. Identifying throughput limits and bottlenecks.
Success criteria	System sustains >100K orders/second with latency requirements maintained, resource utilization <80%, and no message loss or corruption.
Decomposed into	
Verdict	Pass

TEST-SYS-PERF-004

Verifies	SYS-PERF-004
Approach	UsesFailoverTest
Methods	Test, Analysis
Environment	Production-like Staging
Procedure	Verify availability by: 1. Simulating component failures (server, network, feed, gateway). 2. Measuring failover timing and service restoration. 3. Validating redundancy and hot-standby mechanisms. 4. Testing operational procedures for recovery. 5. Validating data consistency after failover.
Success criteria	Failover completes within 5 minutes with no data loss, backup systems activate correctly, and aggregate monthly downtime <5 minutes under simulated failure scenarios.
Decomposed into	
Verdict	Inconclusive

Functional Requirement Verification

TEST-SYS-FUNC-001

Verifies	SYS-FUNC-001
Approach	UsesExchangeSimulator
Methods	Test
Environment	Exchange Test Environment
Procedure	Verify multi-feed ingestion by connecting to multiple simulated exchange feeds simultaneously and validating data integrity, sequencing, and gap handling for each feed.

Verifies	SYS-FUNC-001
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-FUNC-002

Verifies	SYS-FUNC-002
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify data normalization by ingesting data in multiple exchange formats and validating correct mapping to unified internal representation with all required fields.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-FUNC-003

Verifies	SYS-FUNC-003
Approach	UsesExchangeSimulator
Methods	Test
Environment	Exchange Test Environment
Procedure	Verify order lifecycle tracking by submitting orders through exchange simulator and validating state transitions for all scenarios (fills, partial fills, cancels, rejects).
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-FUNC-004

Verifies	SYS-FUNC-004
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify P&L calculation by establishing positions through simulated fills, updating prices, and comparing computed P&L against independent verification for various scenarios (long, short, multi-leg, cross-currency).

Verifies	SYS-FUNC-004
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-FUNC-005

Verifies	SYS-FUNC-005
Approach	UsesBacktest
Methods	Test, Analysis
Environment	Market Simulator
Procedure	Verify historical market data replay by backtesting strategies over a period they also traded live and comparing backtest results against live trading performance.
Success criteria	
Decomposed into	
Verdict	Not run

TEST-SYS-FUNC-006

Verifies	SYS-FUNC-006
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify strategy deployment by deploying strategies with configured risk parameters and validating that all parameters are applied before the first order is generated.
Success criteria	
Decomposed into	
Verdict	Not run

TEST-SYS-FUNC-007

Verifies	SYS-FUNC-007
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify strategy commands by issuing halt and modification commands to running strategies and measuring the time to operator confirmation.

Verifies	SYS-FUNC-007
Success criteria	
Decomposed into	
Verdict	Not run

Risk Control Requirement Verification

TEST-SYS-RISK-001

Verifies	SYS-RISK-001
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify order size limits through automated testing of rejection behavior for oversized orders.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-RISK-002

Verifies	SYS-RISK-002
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify position limits through automated testing of position accumulation and limit enforcement.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-RISK-003

Verifies	SYS-RISK-003
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify price collar checks through automated testing of orders with prices outside acceptable ranges relative to current market.

Verifies	SYS-RISK-003
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-RISK-004

Verifies	SYS-RISK-004
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify duplicate order detection through automated testing of intentional duplicate submissions within detection window.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-RISK-005

Verifies	SYS-RISK-005
Approach	UsesLatencyBenchmark
Methods	Test
Environment	Production-like Staging
Procedure	Verify kill switch latency through precision timing measurement of activation to complete trading halt.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-RISK-006

Verifies	SYS-RISK-006
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify correlation alerts through automated testing of strategy pairs whose correlation is driven above configured thresholds, checking alert timing and the reported pairs.

Verifies	SYS-RISK-006
Success criteria	
Decomposed into	
Verdict	Not run

TEST-SYS-RISK-007

Verifies	SYS-RISK-007
Approach	UsesLatencyBenchmark
Methods	Test
Environment	Production-like Staging
Procedure	Verify daily loss limit halt through precision timing measurement of limit breach to complete trading halt.
Success criteria	
Decomposed into	
Verdict	Not run

System Compliance Requirement Verification

TEST-SYS-COMP-001

Verifies	SYS-COMP-001
Approach	UsesComplianceAudit
Methods	Inspection, Analysis
Environment	Auditor
Procedure	Verify audit logging through review of log completeness, attribute presence, and format compliance for regulatory reporting.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-COMP-002

Verifies	SYS-COMP-002
Approach	UsesIntegrationTest
Methods	Test, Analysis
Environment	Market Simulator
Procedure	

Verifies	SYS-COMP-002
	Verify best execution monitoring through automated testing of benchmark calculations and report generation.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-COMP-003

Verifies	SYS-COMP-003
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator
Procedure	Verify restricted list enforcement through automated testing of order rejection for restricted securities.
Success criteria	
Decomposed into	
Verdict	Pass

TEST-SYS-COMP-004

Verifies	SYS-COMP-004
Approach	UsesComplianceAudit
Methods	Inspection, Analysis
Environment	Auditor
Procedure	Verify transaction reporting through review of generated MiFID II transaction reports and SEC audit trail records against regulatory schemas and the T+1 deadline.
Success criteria	
Decomposed into	
Verdict	Not run

TEST-SYS-COMP-005

Verifies	SYS-COMP-005
Approach	UsesIntegrationTest
Methods	Test
Environment	Market Simulator

Verifies	SYS-COMP-005
Procedure	Verify market abuse surveillance through automated testing with simulated wash trade and layering patterns.
Success criteria	
Decomposed into	
Verdict	Not run

Close-out status

A requirement is closed when every test case that verifies it passes.

Requirement status

Table 10: Requirements per verification status

Status	Requirements
Open	11
Closed	29

Test case verdicts

Table 11: Test cases per verdict

Verdict	Test cases
Inconclusive	3
Pass	29
Not run	8

Open items

Table 12: Open items

Test case	Requirement	Verdict	Notes
TEST-STKR-EXEC-001	STKR-EXEC-001	Inconclusive	Risk-adjusted returns validation requires extended live trading period. Pre-production verification completed through: • Multi-year backtesting on historical data showing positive Sharpe ratios • Paper trading validation demonstrating strategy logic correctness • Risk control integration testing confirming limit enforcement Full validation postponed pending 6-month live trading period.
TEST-STKR-EXEC-003	STKR-EXEC-003	Inconclusive	Catastrophic loss prevention verified through: • Position limit enforcement testing with 100% rejection rate • Loss limit breach detection within 100ms (99.9th percentile) • Emergency kill switch activation within 100ms with complete order cancellation
TEST-STKR-USER-005	STKR-USER-005	Not run	
TEST-SYS-PERF-004	SYS-PERF-004	Inconclusive	Availability partially verified: • Component failover: Server failures recovered in 180 seconds • Network failover: Alternate path switched in 45 seconds • Feed failover: Backup feed activated in 15 seconds • Data consistency: Validated post-failover with no corruption • Monthly downtime projection: ~3 minutes (target <5 minutes) ✓ • Note: Extended availability testing (30+ days) postponed to production • Hot-standby mechanisms validated in staging environment
TEST-SYS-FUNC-005	SYS-FUNC-005	Not run	
TEST-SYS-FUNC-006	SYS-FUNC-006	Not run	
TEST-SYS-FUNC-007	SYS-FUNC-007	Not run	
TEST-SYS-RISK-006	SYS-RISK-006	Not run	
TEST-SYS-RISK-007	SYS-RISK-007	Not run	
TEST-SYS-COMP-004	SYS-COMP-004	Not run	
TEST-SYS-COMP-005	SYS-COMP-005	Not run	

Results

Table 13: Test case results

Test case	Requirement	Verdict	Result
TEST-STKR-EXEC-001	STKR-EXEC-001	Inconclusive	Risk-adjusted returns validation requires extended live trading period. Pre-production verification completed through: • Multi-year backtesting on historical data showing positive Sharpe ratios • Paper trading validation demonstrating strategy logic correctness • Risk control integration testing confirming limit enforcement Full validation postponed pending 6-month live trading period.
TEST-STKR-EXEC-002	STKR-EXEC-002	Pass	Regulatory compliance verified through: • MiFID II transaction reporting validation against regulatory schemas • SEC audit trail requirements verification with nanosecond timestamps • Compliance consultant review of audit logging and reporting capabilities • Successful completion of all compliance requirement verifications
TEST-STKR-EXEC-003	STKR-EXEC-003	Inconclusive	Catastrophic loss prevention verified through: • Position limit enforcement testing with 100% rejection rate • Loss limit breach detection within 100ms (99.9th percentile) • Emergency kill switch activation within 100ms with complete order cancellation
TEST-STKR-USER-001	STKR-USER-001	Pass	Backtesting capability verified: • Loaded 5 years of historical market data for major equity indices • Executed sample momentum and mean reversion strategies • Performance metrics (Sharpe ratio, max drawdown) calculated correctly • Results matched benchmark computations within 0.1% accuracy • Corporate actions (splits, dividends) handled appropriately
TEST-STKR-USER-002	STKR-USER-002	Pass	Strategy deployment verified: • Successfully deployed test strategies to the market simulator • Risk parameters correctly applied (position limits, loss limits) • Enable/disable controls function within 100ms response time • Parameter modifications applied without strategy restart • Deployment process validated across multiple strategy types
TEST-STKR-USER-003	STKR-USER-003	Pass	Real-time monitoring verified: • P&L calculations matched independent verification within 0.01%

Test case	Requirement	Verdict	Result
			• Dashboard updates occurred within 50ms of fill events • Position reconciliation accurate across all test scenarios • Risk metrics (exposure, concentration) calculated correctly • Alert generation functional for configured thresholds
TEST-STKR-USER-004	STKR-USER-004	Pass	Strategy control verified: • Halt procedures stopped active strategies within 100ms per console timestamps • Pending orders handled according to configured policy • Runtime parameter changes applied without strategy restart • Emergency procedures validated for all strategy types
TEST-STKR-USER-005	STKR-USER-005	Not run	
TEST-STKR-RISK-001	STKR-RISK-001	Pass	Position limit enforcement verified: • Strategy-level limits: 10,000 test orders submitted, 100% rejection for violations • Instrument-level limits: 5,000 test orders, 100% rejection for violations • Portfolio aggregate limits: 8,000 test orders, 100% rejection for violations • Cross-strategy position calculation accurate in all scenarios • Appropriate logging and alerting generated for all rejections
TEST-STKR-RISK-002	STKR-RISK-002	Pass	Loss limit breach detection verified: • Detection latency: 99.9th percentile = 45ms (target <100ms) • Trading halt propagation: All strategies halted within 80ms • Order cancellation: All pending orders canceled successfully • Tested across 50 simulated breach scenarios • No false positives in 10,000 normal trading simulations
TEST-STKR-RISK-003	STKR-RISK-003	Pass	Pre-trade risk checks verified: • All orders processed through complete risk check pipeline • Size checks: 100% violation detection rate • Price checks: 100% violation detection rate • Position checks: 100% violation detection rate • Concentration checks: 100% violation detection rate • Pre-trade check latency: 99th percentile = 150µs (target <200µs)
TEST-STKR-RISK-004	STKR-RISK-004	Pass	Erroneous order detection verified: • Fat-finger detection: 99.95% accuracy across 5,000 test cases • Duplicate detection: 99.99% accuracy within 500ms window • False positive rate: 0.08% (target <0.1%) • Edge cases tested: boundary prices, maximum quantities • Detection latency maintained within acceptable limits
TEST-STKR-RISK-005	STKR-RISK-005	Pass	Emergency kill switch verified: • Activation latency: 99.9th percentile = 35ms (target <100ms) • Order cancellation: 100% of pending orders canceled

Test case	Requirement	Verdict	Result
			• Strategy halt: All strategies halted successfully • Interface testing: UI, API, and hardware button all functional • Recovery procedures validated for re-enabling trading
TEST-STKR-COMP-001	STKR-COMP-001	Pass	Audit trail verified: • Event capture: 100% of trading events logged • Timestamp precision: Nanosecond timestamps verified • Clock synchronization: NTP sync verified within 1ms • Immutability: Cryptographic integrity verification successful • Retention: 5-year retention capabilities tested • Retrieval: Query performance acceptable for regulatory audits • Compliance review: External compliance consultant approval obtained
TEST-STKR-COMP-002	STKR-COMP-002	Pass	Regulatory reporting verified: • MiFID II RTS 22 reports: Validated against regulatory XML schema • SEC CAT reports: Validated against CAT reporting technical specifications • Field completeness: 100% of required fields present and correct • Timeliness: Reports generated within required timeframes • Format validation: All reports pass automated compliance checks • Compliance consultant: External review approved for production use
TEST-STKR-COMP-003	STKR-COMP-003	Pass	Trade surveillance verified: • Wash trade detection: 96.5% sensitivity with known patterns • Layering detection: 94.8% sensitivity with known patterns • Spoofing detection: 95.2% sensitivity with known patterns • False positive rate: 4.2% (target <5%) • Alert generation: Timely alerts within configured windows • Tested with 2,000 known market abuse scenarios
TEST-STKR-COMP-004	STKR-COMP-004	Pass	Best execution monitoring verified: • Execution quality metrics: 100% capture rate • VWAP benchmarks: Verified against independent computation (0.01% accuracy) • Arrival price benchmarks: Verified against independent computation • Implementation shortfall: Calculated correctly across all scenarios • Multi-venue comparison: Accurate venue quality analysis • Reports: Suitable for regulatory best execution reviews
TEST-SYS-PERF-001	SYS-PERF-001	Pass	Market data latency verified: • 50th percentile: 0.42ms (median) • 99th percentile: 0.87ms • 99.9th percentile: 0.95ms (target <1ms) ✓

Test case	Requirement	Verdict	Result
			• Tested at realistic message rates: 500K messages/sec • Feed types tested: CME iLink3, ICE Multicast, NASDAQ ITCH • Measurement points: Network ingress to strategy data availability
TEST-SYS-PERF-002	SYS-PERF-002	Pass	Order submission latency verified: • 50th percentile: 0.35ms (median) • 99th percentile: 0.82ms (target <1ms) ✓ • 99.9th percentile: 1.15ms • Measurement: Signal generation to exchange gateway • Includes: Risk checks (150µs), routing (250µs), encoding (120µs) • Component latency budgets validated individually
TEST-SYS-PERF-003	SYS-PERF-003	Pass	Throughput capacity verified: • Sustained throughput achieved: 125,000 orders/sec (target >100K) ✓ • Burst throughput: 180,000 orders/sec (30 second burst) • Latency under load: Requirements maintained at 120K orders/sec • Resource utilization at sustained load: CPU 72%, Memory 65% • No message loss or corruption detected in 8-hour load test • Bottleneck analysis: Network interface identified as scaling limit
TEST-SYS-PERF-004	SYS-PERF-004	Inconclusive	Availability partially verified: • Component failover: Server failures recovered in 180 seconds • Network failover: Alternate path switched in 45 seconds • Feed failover: Backup feed activated in 15 seconds • Data consistency: Validated post-failover with no corruption • Monthly downtime projection: ~3 minutes (target <5 minutes) ✓ • Note: Extended availability testing (30+ days) postponed to production • Hot-standby mechanisms validated in staging environment
TEST-SYS-FUNC-001	SYS-FUNC-001	Pass	Multi-feed ingestion verified: • Connected to 6 simulated exchange feeds simultaneously • Protocols tested: FIX 4.4, FIX/FAST, native binary protocols • Data integrity: 100% message validation success • Sequence numbering: Gap detection and recovery functional • Feed synchronization: Cross-feed arbitrage timing validated
TEST-SYS-FUNC-002	SYS-FUNC-002	Pass	Data normalization verified: • Exchange formats tested: CME, ICE, NASDAQ, CBOE, NYSE, LSE • Field mapping: 100% accuracy across all required fields • Symbol normalization: Consistent mapping validated

Test case	Requirement	Verdict	Result
			• Timestamp normalization: UTC conversion accuracy verified • Unified representation: Downstream components function correctly
TEST-SYS-FUNC-003	SYS-FUNC-003	Pass	Order lifecycle tracking verified: • State transitions: 100% accuracy across 15,000 simulated orders • Full fills: Correct state updates and position calculation • Partial fills: Accurate remaining quantity tracking • Cancellations: Proper order book cleanup • Rejections: Appropriate error handling and alerting • Multi-leg orders: Coordinated lifecycle management validated
TEST-SYS-FUNC-004	SYS-FUNC-004	Pass	P&L calculation verified: • Long positions: 100% accuracy vs independent verification • Short positions: 100% accuracy vs independent verification • Multi-leg positions: Correct aggregate calculation • Cross-currency: FX conversion accuracy validated • Mark-to-market: Real-time pricing updates functional • Accuracy tolerance: All calculations within 0.01% of expected • Tested scenarios: 8,000 position variations
TEST-SYS-FUNC-005	SYS-FUNC-005	Not run	
TEST-SYS-FUNC-006	SYS-FUNC-006	Not run	
TEST-SYS-FUNC-007	SYS-FUNC-007	Not run	
TEST-SYS-RISK-001	SYS-RISK-001	Pass	Order size limits verified: • 5,000 test orders submitted with sizes exceeding configured limits • 100% rejection rate for violations • Rejection latency: <50µs (within pre-trade check budget) • Appropriate error messages generated • Limits configurable per strategy and instrument
TEST-SYS-RISK-002	SYS-RISK-002	Pass	Position limits verified: • 8,000 test orders submitted to breach position limits • 100% rejection rate for violations • Position calculation: Accurate across multiple strategies • Net vs gross limits: Both types enforced correctly • Real-time position updates: Synchronized across components
TEST-SYS-RISK-003	SYS-RISK-003	Pass	Price collar checks verified: • 3,000 test orders with prices outside configured bands • 100% rejection rate for violations • Dynamic collar calculation: Correct relative to market price

Test case	Requirement	Verdict	Result
			• Tested market scenarios: Normal, volatile, and gapping markets • Configurable collar percentages: Validated for multiple settings
TEST-SYS-RISK-004	SYS-RISK-004	Pass	Duplicate order detection verified: • 2,000 intentional duplicate submissions tested • 99.99% detection rate within 500ms window • False positive rate: <0.01% • Detection window configurable: Tested 100ms, 500ms, 1000ms • Order fingerprinting: Robust across slight variations
TEST-SYS-RISK-005	SYS-RISK-005	Pass	Kill switch latency verified: • 100 activation tests performed under various load conditions • Median latency: 25ms • 99.9th percentile: 35ms (target <100ms) ✓ • Complete trading cessation: Validated in all tests • Order cancellation: 100% success rate • Measurement: Button press to last order canceled
TEST-SYS-RISK-006	SYS-RISK-006	Not run	
TEST-SYS-RISK-007	SYS-RISK-007	Not run	
TEST-SYS-COMP-001	SYS-COMP-001	Pass	Audit logging verified: • Log completeness: 100% of required events captured • Attribute presence: All mandatory fields present in 10,000 sample logs • Timestamp accuracy: Nanosecond precision validated • Format compliance: Logs suitable for regulatory export • Retention testing: 5-year retention capabilities validated • Query performance: Acceptable for audit retrieval scenarios
TEST-SYS-COMP-002	SYS-COMP-002	Pass	Best execution monitoring verified: • Benchmark calculations: 100% accuracy vs independent verification • VWAP calculation: Verified across 5,000 test executions • Arrival price calculation: Verified across 5,000 test executions • Implementation shortfall: Calculated correctly for all scenarios • Report generation: Automated reports suitable for regulatory review • Multi-venue analysis: Accurate venue comparison functional
TEST-SYS-COMP-003	SYS-COMP-003	Pass	Restricted list enforcement verified: • 1,500 test orders for restricted securities submitted • 100% rejection rate before market submission • Dynamic list updates: Changes propagated within 5 seconds

Test case	Requirement	Verdict	Result
			• Appropriate alerts generated for all rejections • Compliance officer notifications: Functional and timely • Audit trail: All restriction violations logged completely
TEST-SYS-COMP-004	SYS-COMP-004	Not run	
TEST-SYS-COMP-005	SYS-COMP-005	Not run	

Traceability

Stakeholder to system derivation

Each mark (↗) shows that the stakeholder requirement in the row derives the system requirement in the column.

Table 14: Stakeholder to system derivation matrix

	SYS-PERF-001	SYS-PERF-002	SYS-PERF-003	SYS-PERF-004	SYS-FUNC-001	SYS-FUNC-002	SYS-FUNC-003	SYS-FUNC-004	SYS-FUNC-005	SYS-FUNC-006	SYS-FUNC-007	SYS-RISK-001	SYS-RISK-002	SYS-RISK-003	SYS-RISK-004	SYS-RISK-005	SYS-RISK-006	SYS-RISK-007	SYS-COMP-001	SYS-COMP-002	SYS-COMP-003	SYS-COMP-004	SYS-COMP-005
STKR-EXEC-001																							
STKR-EXEC-002																					↗		
STKR-EXEC-003																	↗						
STKR-USER-001									↗														
STKR-USER-002										↗													
STKR-USER-003								↗															
STKR-USER-004											↗												
STKR-USER-005	↗	↗	↗	↗	↗	↗	↗																
STKR-RISK-001												↗	↗										
STKR-RISK-002								↗										↗					
STKR-RISK-003												↗	↗	↗	↗								
STKR-RISK-004												↗		↗	↗								
STKR-RISK-005																↗							
STKR-COMP-001																			↗				
STKR-COMP-002																						↗	
STKR-COMP-003																							↗
STKR-COMP-004																				↗			

Executive to user derivation

Each mark (↗) shows that the executive requirement in the row derives the user requirement in the column.

Table 15: Executive to user derivation matrix

	STKR-USER-001	STKR-USER-002	STKR-USER-003	STKR-USER-004	STKR-USER-005	STKR-RISK-001	STKR-RISK-002	STKR-RISK-003	STKR-RISK-004	STKR-RISK-005	STKR-COMP-001	STKR-COMP-002	STKR-COMP-003	STKR-COMP-004
STKR-EXEC-001														
STKR-EXEC-002											↗	↗		
STKR-EXEC-003						↗	↗			↗				

Satisfaction matrix

Satisfaction does not imply verification, which is reported in Close-out status.

Table 16: System requirements by component

	marketDataHandler	strategyEngine	orderManagement	riskManagement	executionManagement	compliance	backtesting	monitoring
SYS-PERF-001	↙							
SYS-PERF-002								
SYS-PERF-003								
SYS-PERF-004								
SYS-FUNC-001	↙							
SYS-FUNC-002	↙							
SYS-FUNC-003			↙					
SYS-FUNC-004								↙
SYS-FUNC-005							↙	
SYS-FUNC-006		↙						
SYS-FUNC-007		↙						
SYS-RISK-001				↙				
SYS-RISK-002				↙				
SYS-RISK-003				↙				
SYS-RISK-004				↙				
SYS-RISK-005				↙				
SYS-RISK-006				↙				
SYS-RISK-007				↙				
SYS-COMP-001						↙		
SYS-COMP-002					↙			
SYS-COMP-003						↙		
SYS-COMP-004						↙		
SYS-COMP-005						↙		

Verification traceability

Table 17: Requirements by test case

	TEST-STKR-EXEC-001	TEST-STKR-EXEC-002	TEST-STKR-EXEC-003	TEST-STKR-USER-001	TEST-STKR-USER-002	TEST-STKR-USER-003	TEST-STKR-USER-004	TEST-STKR-USER-005	TEST-STKR-RISK-001	TEST-STKR-RISK-002	TEST-STKR-RISK-003	TEST-STKR-RISK-004	TEST-STKR-RISK-005	TEST-STKR-COMP-001	TEST-STKR-COMP-002	TEST-STKR-COMP-003	TEST-STKR-COMP-004	TEST-SYS-PERF-001	TEST-SYS-PERF-002	TEST-SYS-PERF-003	TEST-SYS-PERF-004	TEST-SYS-FUNC-001	TEST-SYS-FUNC-002	TEST-SYS-FUNC-003	TEST-SYS-FUNC-004	TEST-SYS-FUNC-005	TEST-SYS-FUNC-006	TEST-SYS-FUNC-007	TEST-SYS-RISK-001	TEST-SYS-RISK-002	TEST-SYS-RISK-003	TEST-SYS-RISK-004	TEST-SYS-RISK-005	TEST-SYS-RISK-006	TEST-SYS-RISK-007	TEST-SYS-COMP-001	TEST-SYS-COMP-002	TEST-SYS-COMP-003	TEST-SYS-COMP-004	TEST-SYS-COMP-005
STKR-EXEC-001	↙																																						
STKR-EXEC-002		↙																																					
STKR-EXEC-003			↙																																				
STKR-USER-001				↙																																			
STKR-USER-002					↙																																		
STKR-USER-003						↙																																	
STKR-USER-004							↙																																
STKR-USER-005								↙																															
STKR-RISK-001									↙																														
STKR-RISK-002										↙																													
STKR-RISK-003											↙																												
STKR-RISK-004												↙																											
STKR-RISK-005													↙																										
STKR-COMP-001														↙																									
STKR-COMP-002															↙																								
STKR-COMP-003																↙																							
STKR-COMP-004																	↙																						
SYS-PERF-001																		↙																					
SYS-PERF-002																			↙																				
SYS-PERF-003																				↙																			
SYS-PERF-004																					↙																		
SYS-FUNC-001																						↙																	
SYS-FUNC-002																							↙																
SYS-FUNC-003																								↙															
SYS-FUNC-004																									↙														
SYS-FUNC-005																										↙													
SYS-FUNC-006																											↙												
SYS-FUNC-007																												↙											
SYS-RISK-001																													↙										
SYS-RISK-002																														↙									
SYS-RISK-003																															↙								

	TEST-STKR-EXEC-001	TEST-STKR-EXEC-002	TEST-STKR-EXEC-003	TEST-STKR-USER-001	TEST-STKR-USER-002	TEST-STKR-USER-003	TEST-STKR-USER-004	TEST-STKR-USER-005	TEST-STKR-RISK-001	TEST-STKR-RISK-002	TEST-STKR-RISK-003	TEST-STKR-RISK-004	TEST-STKR-RISK-005	TEST-STKR-COMP-001	TEST-STKR-COMP-002	TEST-STKR-COMP-003	TEST-STKR-COMP-004	TEST-SYS-PERF-001	TEST-SYS-PERF-002	TEST-SYS-PERF-003	TEST-SYS-PERF-004	TEST-SYS-FUNC-001	TEST-SYS-FUNC-002	TEST-SYS-FUNC-003	TEST-SYS-FUNC-004	TEST-SYS-FUNC-005	TEST-SYS-FUNC-006	TEST-SYS-FUNC-007	TEST-SYS-RISK-001	TEST-SYS-RISK-002	TEST-SYS-RISK-003	TEST-SYS-RISK-004	TEST-SYS-RISK-005	TEST-SYS-RISK-006	TEST-SYS-RISK-007	TEST-SYS-COMP-001	TEST-SYS-COMP-002	TEST-SYS-COMP-003	TEST-SYS-COMP-004	TEST-SYS-COMP-005
SYS-RISK-004																															↙								
SYS-RISK-005																																↙							
SYS-RISK-006																																	↙						
SYS-RISK-007																																		↙					
SYS-COMP-001																																			↙				
SYS-COMP-002																																				↙			
SYS-COMP-003																																					↙		
SYS-COMP-004																																						↙	
SYS-COMP-005																																							↙