F L O F M A T R I X

Fractal Liquidity & Order Flow Trading System

SUDDEN MOVE POLICY

The Chameleon Protocol

Context-Adaptive Sudden Move Classification & Response System

Version:	**1.0**
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Markets:	**ES Futures / Crypto**
Platform:	**NautilusTrader + DataBento**
Classification:	**CONFIDENTIAL**

1. Executive Summary

This document defines the Sudden Move Policy for the FLOF Matrix trading system. It specifies how the bot classifies, responds to, and recovers from abnormal market velocity events across both ES futures and cryptocurrency markets.

The policy follows the Chameleon Protocol: a context-adaptive approach that classifies sudden moves into three distinct types and applies a tailored response protocol to each. Rather than applying a single blanket rule to all volatility events, the Chameleon distinguishes between scheduled news events, organic liquidity cascades, and infrastructure degradation, then executes the appropriate defensive or opportunistic response.

CORE DESIGN PRINCIPLE

Not all sudden moves are the same. A CPI print is fundamentally different from a flash crash, which is different from a broker API outage. The Chameleon classifies the cause in real time and responds with the right protocol for that specific scenario, protecting capital when the move is dangerous while staying engaged when the move creates high-probability opportunity.

2. Move Classification System

The Move Classifier runs continuously during active trading hours. When abnormal velocity is detected (defined in Section 3), the classifier categorizes the event into one of three types based on the trigger source. The classification determines which response protocol activates.

TYPE	NAME	TRIGGER SOURCE	RESPONSE PHILOSOPHY
A	**Scheduled Event Spike**	Economic calendar events: CPI, FOMC, NFP, token unlocks, earnings	Defensive. Known danger. Reduce exposure before the event. Resume cautiously after.
B	**Organic Liquidity Cascade**	Unscheduled: flash crash, liquidation waterfall, sudden institutional flow	Opportunistic. These create the highest-probability SMC setups. Stay engaged at reduced size.
C	**Infrastructure Degradation**	DataBento latency, broker API errors, exchange status changes, halt conditions	Full shutdown. No data integrity means no trading. Wait for all-clear.

2.1 Classification Logic (Decision Tree)

When abnormal velocity is detected, the classifier runs this sequence in order. The first matching condition determines the type.

STEP	CHECK	IF TRUE	IF FALSE
1	Is DataBento latency > 500ms, or broker API returning errors, or exchange status = abnormal?	**TYPE C**	Continue to Step 2

2	Is there a scheduled high-impact event within the next 5 minutes, or did one occur within the last 3 minutes?	**TYPE A**	Continue to Step 3
3	Velocity/spread thresholds breached with no calendar event?	**TYPE B**	Normal operation (no sudden move detected)

IMPORTANT: PRIORITY ORDER

Infrastructure checks (Type C) are always evaluated first. A scheduled news event happening during an exchange outage is still Type C because your data cannot be trusted regardless of the cause. Safety before opportunity.

3. Detection Thresholds

These are the concrete numeric thresholds the bot monitors to detect sudden moves and classify them. All thresholds are starting values intended to be refined through backtesting. They are defined as configurable constants in the codebase, not hardcoded logic.

3.1 Sentinel Feed Metrics (Always-On Monitoring)

During active Killzones (NY AM/PM for ES; 24/7 for crypto via free exchange WebSocket), the bot maintains a lightweight Sentinel Feed. Outside Killzones, the bot drops to ohlcv-1m and only monitors basic proximity.

METRIC	ES THRESHOLD	CRYPTO THRESHOLD	DATA SOURCE
Tick Velocity	> 400% of 1hr avg for 5+ sec	> 400% of 1hr avg for 5+ sec	ohlcv-1s trade count / bbo-1s update frequency
Bid-Ask Spread	> 3 ticks (normal = 1 tick)	> 3x rolling 1hr avg spread	bbo-1s (ES); exchange WebSocket (crypto)
1-Second Range Expansion	> 3x the 1-min ATR	> 3x the 1-min ATR	ohlcv-1s high-low range
Volume Spike	> 500% of 1hr avg per second	> 500% of 1hr avg per second	ohlcv-1s volume field

3.2 Infrastructure Health Metrics (Type C Detection)

METRIC	CRITICAL THRESHOLD	ACTION
DataBento Latency	> 500ms	Immediate Type C classification. Data is stale.
Broker API Response Time	> 400ms or any 5xx error	Immediate Type C classification. Order execution unreliable.
Exchange Status	Any non-normal state	Immediate Type C. Includes halts, limit conditions, pre-open states.
DataBento Heartbeat	No tick > 2 seconds (ES during RTH)	Possible feed death. Classify Type C if persists > 5 seconds.
Crypto Exchange API	WebSocket disconnect > 3 seconds	Immediate Type C for that venue. Attempt hedge on secondary exchange.

3.3 Scheduled Event Calendar (Type A Detection)

The bot maintains a static JSON calendar file updated weekly with high-impact scheduled events. The calendar marks the exact release time for each event. A 5-minute pre-event window and a 3-minute post-event window define the Type A zone.

MARKET	EVENT EXAMPLES	PRE-EVENT WINDOW	POST-EVENT WINDOW
ES / CME	CPI, FOMC, NFP, GDP, ISM, Jobless Claims	5 minutes	3 minutes
Crypto	Major token unlocks, protocol upgrades, ETF decisions	5 minutes	3 minutes
Both	Fed Chair speeches, geopolitical escalations (manual flag)	5 minutes	5 minutes

4. Response Protocols

Each move type triggers a distinct response protocol. The protocols define what the bot does with new entries, open positions, and recovery/cooldown behavior.

4.1 Type A Protocol: News Shield

Triggered by scheduled high-impact events. The bot knows these are coming and prepares in advance.

4.1.1 Pre-Event Actions (T minus 5 minutes)

ACTION	DETAILS
Block New Entries	Stalking Mode and Kill Mode are frozen. No new positions may be opened regardless of POI proximity or confluence score.
Tighten Open Stops	If currently in a position, the trailing stop is tightened to the nearest 1-minute LVN instead of the standard 5-minute structural trail. This protects accumulated profit from the event spike.
Widen Quarantine Spread	The bid-ask spread threshold for Quarantine is widened to 4 ticks on ES (from the normal 3) because spreads naturally widen slightly before high-impact releases.
Log Event Context	The bot logs which event triggered the News Shield and at what time. This data is used for post-session performance analysis.

4.1.2 During-Event Actions

No action is taken. The bot waits. Exchange-native OCO brackets protect any open positions. The bot does not attempt dynamic exits during the event spike because tape data is unreliable during the initial reaction.

4.1.3 Post-Event Recovery

PHASE	DETAILS
Cooldown (3 min)	After the scheduled event time, the bot waits 3 minutes for the initial chaos to settle. During this period, the Sentinel Feed is active but the bot will not enter trades.
Structure Check	After cooldown, the bot re-evaluates whether the post-event price structure aligns with the existing HTF bias (Daily/4H). If the event caused a structural break that invalidates the bias, the bot recalculates all POIs before resuming.
Resume	Normal Scouting/Stalking/Kill Mode operation resumes with updated POIs and restored standard thresholds.

4.2 Type B Protocol: Cascade Engagement

Triggered by unscheduled organic liquidity cascades. These are the sudden moves that create the highest-probability SMC setups. The bot stays engaged but with reduced exposure.

4.2.1 Cascade Detection and Data Upgrade

When tick velocity and spread thresholds are breached with no calendar event, the bot immediately upgrades data feeds. If in Scouting Mode, the bot subscribes to trades + tbbo from DataBento (for ES) or activates the full WebSocket depth stream (for crypto). The Proximity Halo expands to 2x the normal ATR multiplier to give maximum lead time as price moves fast toward POIs.

4.2.2 Entry Rules During a Cascade

CONDITION	RULE
Ring Buffer Data	Minimum 30 seconds of tape data required (reduced from normal 60 seconds). If less than 30 seconds are available because the cascade hit before the buffer filled, the bot stands down and logs a miss.
Absorption Confirmation	The bot must see clear absorption at the POI: heavy aggressive selling (for a bullish POI) with zero or minimal downward price displacement. This is the same confirmation as normal Kill Mode, applied with the same standards.
Delta Flip	Within 5 seconds of the absorption event, delta must flip decisively in the trade direction. If the flip doesn't occur within 5 seconds, the setup is classified as a miss.
Position Sizing	**50% of normal risk allocation.** If the normal A+ trade is 2% account risk, a Type B cascade entry uses 1% risk. This accounts for the reduced data window and higher uncertainty while still capturing the outsized R:R these moves produce.
Miss Is Acceptable Rule	If price taps and rejects the POI in under 2 seconds without providing absorption confirmation, the bot does NOT chase. It logs the event as "hyper-fast POI tap — insufficient confirmation" and waits for the next setup.

4.2.3 Open Position Management During a Cascade

If the bot already holds a position when a Type B cascade occurs against the trade direction, the following rules apply:

SCENARIO	ACTION
HVN is holding (absorption detected)	Hold the position. The institutional defense wall is intact. The exchange OCO bracket remains as the hard backstop.
HVN is breaking (tape failure)	Conditional Tape Failure exit activates: if sell delta exceeds 80% with high tape velocity at the bottom of the HVN, the bot market-exits immediately before the hard stop is reached.
Price gaps through LVN Moat	The exchange OCO bracket (hard stop) handles this. The bot accepts the loss at the defined R value. No additional action is possible for a true gap.

4.2.4 Post-Cascade Recovery

The bot monitors for the end of the cascade: tick velocity must drop below 150% of the 1-hour average AND the bid-ask spread must contract to within 1.5x of baseline. Both conditions must be met simultaneously. Once met, a 5-minute cooldown begins. After cooldown, the bot actively hunts for post-

cascade POI setups at full position sizing because post-cascade structures tend to be among the cleanest SMC setups available.

4.3 Type C Protocol: Full Shutdown

Triggered by infrastructure degradation. When data integrity is compromised, no trading decisions can be trusted.

ACTION	DETAILS
Cancel Working Orders	All working limit orders and pending entries are immediately cancelled. Exchange-native OCO brackets on open positions are NOT cancelled (they are the safety net).
Freeze All Logic	Scouting, Stalking, and Kill Mode are all disabled. The bot processes no new signals. It enters a monitoring-only state.
Open Position Handling	Positions remain open with exchange-native brackets as the sole protection. The bot does NOT attempt dynamic exits because the data driving those exits may be unreliable.
Crypto: Hedge Attempt	If the primary crypto exchange API is down while holding a position, the bot attempts to open a hedging position on the secondary exchange (e.g., Bybit if Binance is primary). If the secondary is also down, accept that the exchange OCO is the only protection.
Recovery Criteria	All infrastructure health metrics must return to normal for 60 consecutive seconds. There is no fixed cooldown timer. The bot simply waits for green health across all systems.

5. Master Decision Matrix

This is the complete scenario-to-action mapping. Every combination of bot state, sudden-move type, and market condition is covered. Use this matrix as the primary coding reference.

5.1 Scenarios: Sudden Move TOWARD a POI (Entry Decisions)

SCENARIO	MOVE TYPE	RING BUFFER STATUS	BOT ACTION
Fast move hits POI	**TYPE A**	Any	**NO ENTRY. News Shield active. Log and wait for post-event cooldown.**
Fast move hits POI, good data	**TYPE B**	> 30 sec of data	**ENTER at 50% size if absorption + delta flip confirmed within 5 sec.**
Fast move hits POI, insufficient data	**TYPE B**	< 30 sec of data	**NO ENTRY. Log as "insufficient data miss." Wait for next setup.**
Hyper-fast POI tap (< 2 sec)	**TYPE B**	Any	**NO ENTRY. Log as "hyper-fast tap miss." Do not chase.**
Move hits POI during outage	**TYPE C**	Any	**NO ENTRY. Full shutdown. Data integrity cannot be verified.**
Normal speed move hits POI	**NONE**	> 60 sec of data	**Standard Kill Mode entry protocol. Full position sizing.**

5.2 Scenarios: Sudden Move AGAINST an Open Position (Defense Decisions)

SCENARIO	MOVE TYPE	HVN STATUS	BOT ACTION
Adverse move, HVN absorbing	**TYPE B**	Intact (buyers defending)	**HOLD. Institutional defense active. OCO bracket is backstop.**
Adverse move, HVN breaking	**TYPE B**	Failing (80%+ sell delta)	**CONDITIONAL EXIT. Market-sell immediately before hard stop. Save capital.**
Gap through LVN Moat	**ANY**	Bypassed entirely	**EXCHANGE OCO HANDLES. Accept defined-R loss. No additional action possible.**
Adverse move during news	**TYPE A**	Any	**EXCHANGE OCO ONLY. Do not attempt dynamic exit. Tape data unreliable.**
Adverse move during outage	**TYPE C**	Unknown (no data)	**EXCHANGE OCO ONLY. Crypto: attempt hedge on secondary exchange.**
Server crash while in trade	**TYPE C**	N/A	**EXCHANGE OCO HANDLES. Bot is dead. Hard stop rests on exchange server.**

5.3 Scenarios: System and Environment Failures

SCENARIO	BOT ACTION
RiskOverlord: Order spam detected (> 3 orders / 60 sec)	Nuclear Flatten. Cancel all orders, market-exit all positions, terminate process. Requires manual restart.
RiskOverlord: Fat finger detected (size > MAX_POSITION_SIZE)	Block order. Log the error. Nuclear Flatten and terminate process.
RiskOverlord: Daily drawdown limit hit	Nuclear Flatten. Bot is done for the day. Requires manual restart next session.
RiskOverlord: 3 consecutive losses	Nuclear Flatten. Prevents "death by a thousand cuts" in a bad regime.
RiskOverlord: Stale data (exchange timestamp > 500ms behind local clock)	Classify Type C. If in a position, rely on exchange OCO. Flatten and terminate if stale data persists > 10 seconds.
ES circuit breaker / price limit hit	Classify Type C. Trading may be constrained or paused by CME. Bot cannot trade during a halt. Accept exchange OCO protection only.
Crypto exchange full outage	Classify Type C. Attempt hedge on secondary exchange. If secondary also down, no action possible. Log everything for post-mortem.

6. Cooldown and Recovery Rules

Each move type has a distinct recovery process. The bot does not resume normal operations immediately after a sudden move ends. These cooldown periods prevent the bot from entering during aftershock volatility.

TYPE	COOLDOWN DURATION	RECOVERY CONDITION	RESUME BEHAVIOR
TYPE A	3 minutes (fixed timer)	Timer expires + HTF bias re-evaluated + POIs recalculated if structure changed	Full normal operation with updated POIs. Full position sizing restored.
TYPE B	5 minutes (after conditions normalize)	Tick velocity < 150% of 1hr avg AND spread < 1.5x baseline, both sustained for 60 seconds. Then 5-minute cooldown.	Full normal operation. Actively hunt post-cascade setups at full sizing (high-probability window).
TYPE C	No fixed timer	All infrastructure health metrics green for 60 consecutive seconds.	Full normal operation. All POIs and HTF bias re-evaluated from scratch.
NUCLEAR	Indefinite (manual restart required)	Human reviews logs, identifies the bug or issue, and manually restarts the process.	Bot boots fresh. All state is recalculated from current market data.

7. Market-Specific Adjustments

ES futures and cryptocurrency markets behave differently during sudden moves. These adjustments ensure the Chameleon Protocol accounts for the structural differences between the two venues.

FEATURE	ES (CME)	CRYPTO
Data Provider	DataBento (paid, per-GB). Sentinel uses ohlcv-1s + bbo-1s + status schemas.	Exchange WebSocket (free). Full depth available at no additional cost.
Exchange-Native Brackets	CME OCO brackets. Consider "Stop with Protection" and "Market with Protection" order types for better fill quality.	Exchange OCO (Binance/Bybit). Less reliable during cascading liquidations. Add secondary-exchange hedge as backup.
Circuit Breakers	CME has price limits and circuit breakers. Trading can halt. Bot must respect exchange status field.	No circuit breakers. Price can move without limit. Position sizing and LVN Moat + ATR buffer are the only protection.
Sentinel Feed Schedule	Active during Killzones only (8:30 AM – 4:00 PM EST). Drops to ohlcv-1m overnight.	Always active (free data). 24/7 monitoring with no cost impact.
Cascade-Specific Risk	Spoofing is common. Large book orders may be fake. Rely on tape (executed trades) over book (resting orders).	Cascading liquidations can create chain reactions. Monitor funding rate spikes and open interest drops as leading indicators. Quarantine if both spike simultaneously.
Spread Baseline	1 tick (0.25 points). Quarantine at > 3 ticks.	Varies by pair. Use rolling 1-hour average. Quarantine at > 3x average.
Secondary Venue Hedge	Not applicable. CME is the only venue for ES.	Required. Maintain API connection to secondary exchange. Auto-hedge if primary goes down during open position.

8. Implementation Guide

This section maps the Sudden Move Policy to specific code modules within the NautilusTrader architecture. Each component is designed to be independently testable and switchable via configuration.

8.1 Module Architecture

MODULE	RESPONSIBILITY	DEPENDENCIES
SentinelFeed	Always-on lightweight market monitoring. Calculates tick velocity, spread, range expansion, volume.	DataBento ohlcv-1s + bbo-1s + status (ES). Exchange WebSocket (crypto).
MoveClassifier	Runs the 3-step decision tree. Outputs Type A, B, C, or None.	SentinelFeed metrics + EventCalendar + InfraHealth.
EventCalendar	Stores scheduled events. Returns boolean: is a high-impact event within the pre/post window?	Static JSON file, updated weekly. No external API required.
InfraHealth	Monitors DataBento latency, broker API response, exchange status, heartbeat.	DataBento connection metadata. Broker API response headers. Exchange status feed.
ResponseRouter	Takes MoveClassifier output and routes to the correct protocol (News Shield, Cascade Engagement, Full Shutdown).	MoveClassifier output + current bot state (position status, Scouting/Stalking/Kill Mode).
CooldownManager	Tracks cooldown timers and recovery conditions per move type. Gates the bot from resuming prematurely.	SentinelFeed metrics (for Type B normalization check). System clock (for Type A timer).
RiskOverlord	Independent safety layer. Monitors order rate, position size, drawdown, consecutive losses, data staleness. Triggers Nuclear Flatten.	NautilusTrader order events. Account equity stream. DataBento timestamps.

8.2 Configuration Constants

All thresholds are defined in a single configuration file. This allows rapid tuning without changing logic code. The following are the initial values; adjust through backtesting.

CONSTANT	ES VALUE	CRYPTO VALUE	UNIT / NOTES
TICK_VELOCITY_THRESHOLD	400%	400%	% of 1hr rolling average
TICK_VELOCITY_DURATION	5	5	seconds sustained
SPREAD_QUARANTINE_ES	3	N/A	ticks (normal = 1)

SPREAD_QUARANTINE_CRYPTO	N/A	3x	multiplier of 1hr avg spread
RANGE_EXPANSION_THRESHOLD	3x	3x	multiplier of 1-min ATR
DATABENTO_LATENCY_MAX	500	N/A	milliseconds
BROKER_API_LATENCY_MAX	400	400	milliseconds
DATA_STALE_THRESHOLD	500	500	ms (exchange timestamp vs local clock)
HEARTBEAT_TIMEOUT_ES	5	N/A	seconds (no ticks during RTH)
CRYPTO_WS_TIMEOUT	N/A	3	seconds (WebSocket disconnect)
MIN_RING_BUFFER_SECONDS	30	30	seconds (for Type B entries)
HYPERFAST_TAP_THRESHOLD	2	2	seconds (POI tap-and-reject)
DELTA_FLIP_WINDOW	5	5	seconds after absorption event
TYPE_B_POSITION_SIZE	50%	50%	% of normal risk allocation
TYPE_A_COOLDOWN	180	180	seconds (3 minutes)
TYPE_B_COOLDOWN	300	300	seconds (5 min after normalization)
TYPE_C_HEALTH_WINDOW	60	60	seconds (all-green required)
TAPE_FAILURE_SELL_DELTA	80%	80%	% sell delta to trigger early exit
VELOCITY_NORMAL_THRESHOLD	150%	150%	% of 1hr avg (Type B recovery)
SPREAD_NORMAL_THRESHOLD	1.5x	1.5x	multiplier of baseline (Type B recovery)
MAX_ORDERS_PER_MINUTE	3	3	RiskOverlord rate limiter
MAX_DAILY_DRAWDOWN	-2%	-2%	% of account equity
MAX_CONSECUTIVE_LOSSES	3	3	triggers Nuclear Flatten

9. What Is Covered vs. What Is Not

Engineering honesty is essential. This section clearly defines the boundaries of the Sudden Move Policy. No automated system can be 100% protected from every market scenario. The goal is bounded risk and graceful degradation, not invincibility.

9.1 Fully Covered Scenarios

SCENARIO	PROTECTION MECHANISM
Fast move into POI with confirmation	Halo + Ring Buffer + Order Flow confirmation. Entry at reduced or full size depending on move type.
Fast move into POI without confirmation	"Miss is acceptable" rule. Bot logs and skips. No slippage-chasing.
Adverse move while connected, HVN intact	Hold position. Exchange OCO bracket as backstop. Tape monitoring for early warning.
Adverse move while connected, HVN failing	Conditional Tape Failure exit. Market-sell before hard stop.
Server crash during open trade	Exchange-native OCO bracket. Hard stop rests on exchange server, not yours.
Toxic tape regime (news, extreme spreads)	Quarantine Mode (Type A or Type C). No new entries until conditions normalize.
Code logic bugs (order spam, fat fingers)	RiskOverlord Nuclear Flatten. Independent safety layer terminates the process.
Stale data from DataBento	Timestamp comparison. Type C shutdown if data lags > 500ms.
Crypto primary exchange outage	Secondary-exchange hedge attempt. Exchange OCO as fallback.

9.2 Partially Mitigated Scenarios (Residual Risk)

SCENARIO	MITIGATION	RESIDUAL RISK
Hard gap through stop (price discontinuity)	CME Stop/Market with Protection order types. LVN Moat placement reduces probability.	Fill may be worse than stop price. Maximum loss per trade is bounded but not exact.
ES price limits / circuit breakers	Type C classification. Bot stops trading.	If already in a position when halt occurs, no active management is possible until trading resumes.
Crypto cascading liquidation (extreme)	Secondary-exchange hedge. Funding rate + OI monitoring. Quarantine.	Both exchanges may fail simultaneously. Liquidation engine may fill OCO at extreme price.
Spoofing creating false absorption signals	Rely on tape (executed trades) over book (resting orders) for confirmation.	Sophisticated spoofing may briefly appear as real tape activity. Type B entries at 50% size limit damage.

9.3 Not Covered (Accepted Residual Risk)

SCENARIO	WHY IT CANNOT BE COVERED
Venue-wide exchange outage while in a position	If the exchange itself goes offline, no orders can be submitted or executed by anyone. The only protection is position sizing: never risk more per trade than you can afford to lose in a worst-case gap.
Black swan beyond all price limits	An unprecedented event that gaps price beyond all historical ranges. No automated or manual system can fully protect against this. Mitigation: conservative overall portfolio allocation to futures trading.
Regulatory action (exchange seizure, asset freeze)	External to the trading system. No code-level solution exists. Mitigation: trade only on regulated, established venues. Diversify across exchanges for crypto.

E N D O F D O C U M E N T

FLOF Matrix — Sudden Move Policy — Chameleon Protocol v1.0

This document is the authoritative specification for sudden-move handling in the FLOF Matrix trading system. All code implementations must conform to the thresholds, decision trees, and protocols defined herein.