MINDFORGE INTELLIGENCE

MARKET STATE DETECTOR

THE DATA BUYER BRIEF

[ORTHOGONAL REGIME DATA — INPUTS, OUTPUTS, EVALUATION]

SYSTEM CONTEXT

Market State Detector (MSD) : Daily regime classification. Delivered pre-market. Research tool, not trading signal.

INPUT CLASS : Solar and geomagnetic activity from NOAA and NASA — the same input class Federal Reserve research (Krivelyova & Robotti, 2003) tied to equity returns.

CORE FINDING

A daily regime feed nobody else has.

Orthogonal to VIX, options flow, sentiment, and macro.

Backtest window: 2012–2024 + 2025–2026 OOS • 100% precision (Systemic Stress, 9/9) • mindforge.tech/terms

INPUTS

WHAT THE DATA IS

INPUTS, PROCESSING, OUTPUT, DELIVERY

INPUTS	Solar and geomagnetic activity from **NOAA and NASA** monitoring networks — the same input class **Federal Reserve research** (Krivelyova & Robotti, 2003, FRB Atlanta WP 2003-5b) tied to equity returns.
ORTHOGONALITY	Structurally uncorrelated to VIX, options flow, sentiment, and macro indicators — a genuinely independent axis of information.
PROCESSING	**Rules-based, not ML.** Fixed thresholds with rolling 252-day normalization. Walk-forward only.
AUDITABILITY	Versioned manifests with full audit trail. No model drift, no retraining, no hindsight tuning.

OUTPUT	**5 daily regime states**: Calm, Turning, Stress, Volatility Spike, Systemic Stress. Single classification per day. No intraday noise.
HISTORY	12+ years of historical classifications included for backtesting.
DELIVERY	Delivered pre-market every trading day.
CHANNELS	**API** (REST, JSON) · **Email** (rich HTML) · **CSV** (S3, SFTP) · **Webhook** on state change (<5 min latency)

Cross-era Systemic Stress 1990–2011 backtest history available at mindforge.tech/market-state-detector/systemic-stress-history.

STATES

THE 5 REGIME STATES

2012–2024 BACKTEST • 2025–2026 OUT-OF-SAMPLE

STATE	WHAT IT CLASSIFIES	PRECISION	HITS/TOTAL	FREQ/YR
Systemic Stress	Crisis-level regime: COVID, carry unwind, tariff shock	100%	9/9	0.7
Volatility Spike	VIX expansion without systemic collapse	93%	13/14	1.1
Turning	Regime pivot point: transition between states	95%	58/61	4.7
Stress (Advisory)	Elevated conditions, advisory-level warning	60%	9/15	1.2
Calm	Benign regime: reduced risk posture appropriate	Meta	—	~71% of days

WHY 5 STATES, NOT RISK-ON / RISK-OFF

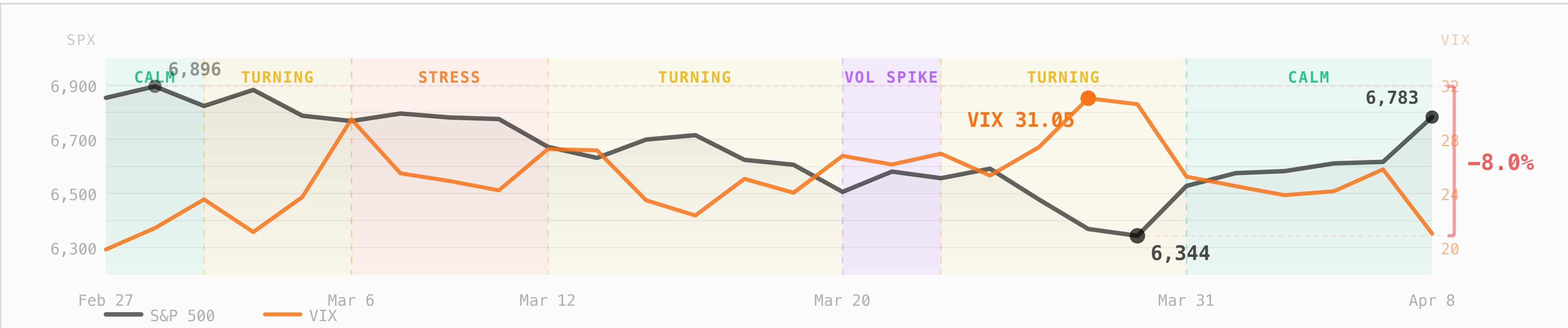
The system distinguishes a **Volatility Spike** (VIX expansion) from **Systemic Stress** (crisis-level). Oct 2024 was Vol Spike, not Systemic Stress — no forced liquidation on a temporary expansion. A binary toggle would have over-reacted; the granularity is what makes the feed usable daily.

PROOF

LIVE PROOF — IRAN SHOCK

MAR 2026 • PRODUCTION CLASSIFICATIONS • NOT BACKTESTED

CALM	TURNING	STRESS	TURNING	VOL SPIKE	TURNING	CALM
Baseline	**Mar 4**	**Mar 6**	**Mar 13**	**Mar 21**	**Mar 25**	**Mar 31**
VIX 19.86	VIX +12% next session	SPX -95 pts / 4 sessions	SPX -166 pts / 5 sessions	VIX 31.05; SPX 6,344	Vol Spike cleared	VIX -18%; SPX +2.9%



CLASSIFIED PRE-MARKET	Every transition delivered before the trading session opened. Not back-stamped.
VIX PEAK	**31.05** on Mar 27 (CBOE close). Drawdown trough 6,344 on Mar 30.
ROUND-TRIP	Calm (Feb 27) → 5 transitions → Calm (Mar 31). Full crisis classified end-to-end in 28 trading days.
ORTHOGONALITY MOMENTS	Mar 4 Turning called at VIX 23.57 (off Calm before the move). Mar 31 Calm called at VIX 30.61 (back to Calm before VIX normalized).

EVALUATION

PRIOR EPISODES & INTEGRATION

FROM CANONICAL RECORDS • 90-DAY EVALUATION TERMS

10

Trading Days Early

COVID-19 • SS 2020-02-24

Before first s&p 500 circuit breaker

1

Trading Day Early

Carry unwind • SS 2024-08-02

Before flash crash / vix spike to 65

22

Trading Days Early

Tariff episode • VS 2025-03-06

Before tariff-driven vix peak

90-DAY EVAL

Full production feed. 60-day license + 30 days extended access.

BACKTEST

12+ years historical classifications.

SCORING

Pre-defined success criteria.

COMMITMENT

No commitment beyond pilot. Fee credited on conversion.

API

REST/JSON, historical + live endpoints.

EMAIL

Rich HTML, daily pre-market.

CSV

Daily drop (S3, SFTP, email).

WEBHOOK

State-change push (<5 min latency).

MANIFESTS

Versioned rule manifests with audit trail.

EPISODES

Episode catalog with exact dates and values.

METHODS

Walk-forward methodology documentation.

COMPLIANCE

Research-only framing, no advice language.

SAMPLE OUTPUT (API RESPONSE)


```
{
  "date": "2026-03-21",
  "state": "volatility_spike",
  "previous_state": "turning",
  "delivered_at": "2026-03-21T07:28:00-05:00",
  "manifest_version": "1.1.0"
}
```

VERIFY IT LIVE

90 DAYS. FULL ACCESS.

INCLUDES

- Full production feed for 90 days
- 12+ years historical classifications
- Pre-defined scoring & success criteria
- Due diligence documentation package

QUALIFICATION

Complimentary evaluation for qualified institutional research teams. License fee credited against annual subscription on conversion.

RESTRICTED TO INSTITUTIONAL USE

DATA + CRISIS + CALM

This brief: what the data is, how it's delivered, and how to evaluate it.
For PM-facing framing, see **The Crisis Classification Brief** and **The Calm Dividend Brief**.

EVALUATION PORTAL
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