

# Mycelia Signal

## Service Level Agreement for Oracle Data Consumers

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<b>Document</b>	Mycelia Signal Oracle SLA	<b>Version</b>	1.0
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<b>Classification</b>	Public	<b>Contact</b>	info@myceliasignal.com

## 1. Overview

This Service Level Agreement ("SLA") defines the performance commitments that Mycelia Signal provides to developers and institutions consuming oracle price attestation data through our API endpoints. It covers service availability, response time, data freshness, and attestation integrity across all supported trading pairs.

Mycelia Signal operates a sovereign price oracle infrastructure serving cryptographically signed attestations over two payment protocols: L402 (Lightning Network) and x402 (USDC on Base). Each attestation includes the price, timestamp, source list, aggregation method, and a verifiable digital signature embedded in a deterministic canonical payload.

## 2. Nature of the Service

### 2.1 What Mycelia Signal Provides

Mycelia Signal is a **data attestation service**. Each response is a cryptographically signed record of the price that Mycelia Signal's aggregation system observed from named third-party sources at a specific point in time. The attestation represents **what was observed and how it was derived** — it does not constitute a guarantee that the observed price reflects the "true" or "correct" market price of any asset at any given moment.

Specifically, Mycelia Signal commits to operating the service such that for each attestation:

- (a) The price was derived using the documented aggregation method (median or VWAP) applied to the documented set of sources;
- (b) The sources that contributed to the price are identified by name in the signed canonical payload;
- (c) The cryptographic signature is valid and verifiable using the published public key;
- (d) The timestamp in the attestation accurately reflects when the price was computed;
- (e) The minimum source threshold for the requested pair was met at the time of attestation.

*These commitments describe the intended operation of the service. They do not create express or implied warranties beyond what is stated in this SLA.*

### 2.2 What Mycelia Signal Does Not Provide

Mycelia Signal does not provide, and this SLA does not cover:

(a) **Investment, financial, or trading advice.** Attestations are raw data infrastructure, not recommendations. Consumers must make their own independent decisions about how to use oracle data. (b) **A guarantee of price accuracy.** Oracle prices are derived from third-party exchange APIs and public data sources. Mycelia Signal does not control these sources and cannot guarantee that any individual source reports accurate data at all times. (c) **A reference price for settlement.** Unless a separate written agreement explicitly designates Mycelia Signal data as a reference rate for a specific contract or instrument, consumers should not treat attestations as authoritative settlement prices. (d) **Fitness for any particular purpose.** Consumers are solely responsible for evaluating whether Mycelia Signal data is appropriate for their specific use case, including but not limited to collateral valuation, liquidation triggers, derivatives settlement, or regulatory reporting. (e) **A fiduciary or advisory relationship.** Mycelia Signal is a data infrastructure provider. No fiduciary, advisory, or professional relationship is created by the use of this service.

### 2.3 Process Integrity vs. Outcome Accuracy

Mycelia Signal commits to **process integrity**: that the system operates as documented, that sources are queried as described, that aggregation follows the stated methodology, and that signatures are correctly applied. Mycelia Signal makes **no representation regarding outcome accuracy**: that any individual price attestation matches the price available on any specific exchange, the price at which a trade could be executed, or the price reported by any other oracle or data provider at the same moment.

### 2.4 Disclaimer of Warranties

THE SERVICE IS PROVIDED "AS IS" AND "AS AVAILABLE." EXCEPT FOR THE SPECIFIC COMMITMENTS STATED IN THIS SLA, MYCELIA SIGNAL EXPRESSLY DISCLAIMS ALL WARRANTIES, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, OR NON-INFRINGEMENT. NO ORAL OR WRITTEN INFORMATION OR ADVICE PROVIDED BY MYCELIA SIGNAL SHALL CREATE A WARRANTY NOT EXPRESSLY STATED HEREIN.

## 3. Covered Services

This SLA applies to the following oracle endpoints served via [api.myceliasignal.com](https://api.myceliasignal.com):

Pair	Sources	Method	Price (x402 / L402)
BTC/USD Spot	9 exchanges	Median	\$0.001 / 10 sats
BTC/USD VWAP	7 exchanges	VWAP (5-min)	\$0.002 / 20 sats
ETH/USD Spot	5 exchanges	Median	\$0.001 / 10 sats
EUR/USD Spot	8 sources (6 central banks + 2 exchanges)	Median	\$0.001 / 10 sats

Pair	Sources	Method	Price (x402 / L402)
XAU/USD Spot	8 sources (3 bullion dealers + 5 exchanges)	Median	\$0.001 / 10 sats
SOL/USD Spot	9 exchanges	Median	\$0.001 / 10 sats
BTC/EUR Spot	17 combined (cross-rate)	Cross-rate median	\$0.001 / 10 sats
ETH/EUR Spot	4 sources (hybrid)	Hybrid median	\$0.001 / 10 sats
SOL/EUR Spot	4 sources (hybrid)	Hybrid median	\$0.001 / 10 sats
XAU/EUR Spot	Combined (cross-rate)	Cross-rate	\$0.001 / 10 sats
BTC/EUR VWAP	Combined (cross-rate)	VWAP cross-rate	\$0.002 / 20 sats

Free endpoints (/health, /sho/info, /.well-known/x402, /dlc/oracle/\*) are provided on a best-effort basis and are not covered by this SLA.

## 4. Service Availability

### 4.1 Uptime Commitment

Mycelia Signal targets 99.95% monthly uptime for all paid oracle endpoints, measured as the percentage of minutes in a calendar month during which the service successfully responds to valid, authenticated requests with a correct attestation.

<b>Monthly Uptime Target</b>	99.95%
<b>Maximum Unscheduled Downtime</b>	21.9 minutes / month
<b>Measurement Period</b>	Calendar month (UTC)
<b>Measurement Method</b>	Independent third-party monitoring (UptimeRobot) + internal Prometheus
<b>Monitoring Granularity</b>	1-minute intervals

### 4.2 Uptime Calculation

Uptime is calculated as:  $(\text{Total Minutes} - \text{Downtime Minutes}) / \text{Total Minutes} \times 100$ . A minute is considered "down" if more than 50% of health check probes within that minute fail to receive a valid HTTP 200 response from the service endpoint.

### 4.3 Exclusions

The following are excluded from downtime calculations: (a) scheduled maintenance windows announced at least 48 hours in advance; (b) force majeure events including but not limited to natural disasters, acts of war, or government actions; (c) failures of upstream infrastructure providers beyond

Mycelia Signal's reasonable control, including cloud provider outages, DNS provider failures, or CDN disruptions; (d) denial-of-service attacks or other malicious activity directed at the service; (e) failures caused by the consumer's own systems, network connectivity, or improper API usage.

#### **4.4 Service Credits**

Given the per-query pricing model of the service, traditional service credit structures are not applicable. If monthly uptime falls below 99.95% due to causes not excluded under Section 4.3, Mycelia Signal will: (a) publish a post-incident report within five (5) business days identifying root cause and corrective actions; (b) provide advance notice of any architectural or operational changes implemented as a result. As the service matures and enterprise subscription tiers are introduced, formal service credit structures may be added in future revisions of this SLA.

## 5. Response Time

### 5.1 Latency Targets

Response time is measured from receipt of a valid, authenticated HTTP request to the transmission of the complete response body, excluding network transit time between the consumer and the Cloudflare edge. Each request triggers a fresh query to upstream sources — attestations are not served from a pre-computed cache. Because source queries are performed in real time, response latency is primarily a function of upstream source response times rather than Mycelia Signal's own infrastructure.

Pair Category	Target Latency	Maximum Latency
Direct pairs (BTC/USD, ETH/USD, EUR/USD, XAU/USD, SOL/USD)	< 2 seconds (p50) < 3 seconds (p95)	< 5 seconds
Cross-rate and hybrid pairs (BTC/EUR, ETH/EUR, SOL/EUR, XAU/EUR, BTC/EUR VWAP)	< 5 seconds (p50) < 8 seconds (p95)	< 15 seconds

*Cross-rate pairs exhibit higher latency because they aggregate data from multiple upstream feeds. This is inherent to the methodology and is not considered a service degradation. Latency exceeding the targets above due to upstream source slowness is not counted as a service failure.*

### 5.2 Timeout Recommendations

Developers should configure HTTP client timeouts of at least 15 seconds for cross-rate and hybrid pairs and at least 5 seconds for direct pairs. Requests that timeout due to insufficient client-side timeout configuration are not counted as service failures.

## 6. Data Freshness

### 6.1 Freshness Commitment

Every oracle attestation includes an ISO 8601 timestamp in the signed canonical payload. Mycelia Signal serves attestations with prices derived from source data collected at the time of the request. Each request triggers fresh upstream queries — the service does not return cached or pre-computed prices.

<b>Attestation Staleness</b>	< 30 seconds from request time
<b>Source Data Age</b>	< 60 seconds from exchange API response
<b>Stale Attestation Alert</b>	Triggered if no fresh attestation in > 2 minutes

### 6.2 Source Transparency

Each attestation embeds the complete list of sources that contributed to the price calculation in the signed canonical payload. Consumers can independently verify which exchanges or data providers

were included in any given attestation. If a source is temporarily unavailable, the oracle will serve an attestation using the remaining available sources, provided the minimum source threshold for that pair is met.

### 6.3 Minimum Source Thresholds

Each pair has a defined minimum number of sources required to produce a valid attestation. If the threshold is not met, the endpoint returns an error rather than serving potentially unreliable data. Some pairs implement adaptive thresholds that adjust when specific source categories are excluded by safety mechanisms.

Pair	Total Sources	Minimum Required	Adaptive Condition
BTC/USD Spot	9	6	Drops to 4 if USDT sources excluded (>0.5% divergence from USD)
BTC/USD VWAP	7	4	Drops to 3 if USDT sources excluded
ETH/USD	5	3	—
EUR/USD	8	4	—
XAU/USD	8	3	Drops to 2 if PAXG-derived sources excluded
SOL/USD	9	5	Drops to 3 if USDT sources excluded
ETH/EUR	4	2	—
SOL/EUR	4	2	—
BTC/EUR	17	Inherited	Fails if either BTC/USD (min 6) or EUR/USD (min 4) feed fails
XAU/EUR	Combined	Inherited	Fails if either XAU/USD (min 3) or EUR/USD (min 4) feed fails
BTC/EUR VWAP	Combined	Inherited	Fails if either BTC/USD VWAP (min 4) or EUR/USD (min 4) feed fails

### 6.4 USDT Normalization

For BTC/USD, BTC/USD VWAP, and SOL/USD, some sources report prices in USDT rather than USD. These are normalized to USD using a live USDT/USD rate sourced from Kraken and Bitstamp (median). If the USD-denominated median and USDT-denominated median diverge by more than 0.5%, all USDT sources are automatically excluded from the attestation and the minimum source threshold is reduced accordingly. This mechanism protects against stablecoin depeg contamination.

## 7. Attestation Integrity

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Every oracle response includes a cryptographic signature over the canonical attestation payload. This signature is independently verifiable by any consumer and provides assurance that the attested data has not been altered in transit.

Protocol	Signature Scheme	Key Distribution
L402 (Lightning)	secp256k1 (ECDSA)	Compressed public key in each response
x402 (USDC on Base)	Ed25519	Hex public key in each response
DLC Oracle	Schnorr (BIP-340)	Published via /dlc/oracle/pubkey

## 7.1 Canonical Payload Format

The signed canonical string follows a deterministic, pipe-delimited format:

```
v1 | PAIR | PRICE | CURRENCY | DECIMALS | TIMESTAMP | NONCE | SOURCES | METHOD
```

This format ensures that the signature covers the complete attestation context. Consumers should verify the signature against the canonical string before relying on the price data for any purpose.

## 8. Limitation of Liability

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### 8.1 Scope of Liability

Each oracle attestation is an independent, individually priced transaction. To the maximum extent permitted by applicable law, Mycelia Signal's liability for any claim arising from a specific attestation shall not exceed the fee paid by the consumer for that individual attestation. For claims not attributable to a specific attestation, Mycelia Signal's aggregate liability shall not exceed the total fees paid by the consumer to Mycelia Signal during the thirty (30) day period immediately preceding the event giving rise to the claim.

### 8.2 Exclusion of Consequential Damages

IN NO EVENT SHALL MYCELIA SIGNAL BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING BUT NOT LIMITED TO: (A) TRADING LOSSES OR MISSED TRADING OPPORTUNITIES; (B) LIQUIDATION EVENTS OR MARGIN CALLS TRIGGERED BY ORACLE DATA; (C) LOSSES ARISING FROM SMART CONTRACT EXECUTION, DLC SETTLEMENT, OR AUTOMATED TRADING SYSTEMS THAT CONSUME ORACLE DATA; (D) LOSS OF PROFITS, REVENUE, DATA, OR BUSINESS INTERRUPTION; (E) COSTS OF PROCUREMENT OF SUBSTITUTE DATA SERVICES — REGARDLESS OF THE CAUSE OF ACTION OR THE THEORY OF LIABILITY, EVEN IF MYCELIA SIGNAL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### 8.3 Upstream Source Risk

Mycelia Signal aggregates data from third-party exchange APIs and public data sources. Mycelia Signal does not control, operate, or audit these upstream sources and is not liable for: (a) inaccurate, delayed, or manipulated data reported by any exchange or data provider; (b) temporary or permanent unavailability of any upstream source; (c) discrepancies between prices reported by different sources; (d) exchange-specific events such as flash crashes, circuit breakers, maintenance windows, or liquidity gaps that may cause individual source prices to diverge from broader market conditions.

## 8.4 Market Conditions

Oracle attestations reflect aggregated market data at a point in time. During periods of extreme volatility, low liquidity, or market dislocation, the attested price may not reflect the price at which a transaction could actually be executed on any specific venue. Mycelia Signal is not liable for price movements, market conditions, or execution outcomes.

## 8.5 Jurisdictional Savings Clause

Nothing in this SLA excludes or limits liability that cannot be excluded or limited under applicable law, including but not limited to liability for fraud, willful misconduct, or gross negligence where applicable law does not permit such exclusion. To the extent any limitation in this Section 8 is found unenforceable in a given jurisdiction, such limitation shall be modified to the minimum extent necessary to make it enforceable, and the remaining provisions shall continue in full force and effect.

# 9. Indemnification

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## 9.1 Consumer Indemnification

The consumer agrees to indemnify, defend, and hold harmless Mycelia Signal from any third-party claims, damages, or expenses (including reasonable legal fees) arising from: (a) the consumer's use of oracle data in any product, service, or system; (b) the consumer's failure to implement appropriate risk management, data validation, or signature verification practices as described in this SLA; (c) any representation made by the consumer to third parties regarding the accuracy, reliability, or suitability of oracle data beyond what is stated in this SLA.

## 9.2 Mycelia Signal Indemnification

Mycelia Signal agrees to indemnify, defend, and hold harmless the consumer from any third-party claims, damages, or expenses (including reasonable legal fees) arising from: (a) Mycelia Signal's gross negligence or willful misconduct in operating the service; (b) any infringement of a third party's intellectual property rights by the service itself (excluding claims arising from the consumer's use or combination of oracle data with other systems).

# 10. Consumer Responsibilities

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To receive the full benefit of this SLA, and as a condition of relying on oracle data, consumers should:

(a) **Verify signatures** on all attestations before using price data in any production system. Signature verification is the consumer's primary defense against data tampering in transit. (b) **Validate the**

**source list** in each canonical payload to confirm the attestation meets the consumer's own requirements for source diversity and quality. (c) **Cross-reference** oracle data with independent price sources before using it for high-value decisions such as liquidation triggers, margin calculations, or settlement. (d) **Configure appropriate timeouts** (minimum 5 seconds for direct pairs, 15 seconds for cross-rate pairs). (e) **Implement retry logic** with exponential backoff for transient failures. (f) **Subscribe** to the developer mailing list and status page for maintenance and incident notifications. (g) **Implement independent circuit breakers** in any automated system that consumes oracle data, to prevent cascading failures if oracle data is temporarily unavailable or anomalous.

## 10.1 Multi-Oracle Architecture (Strongly Recommended)

Mycelia Signal is designed to operate as one component of a multi-oracle architecture. No single oracle — regardless of provider, methodology, or uptime guarantees — should serve as the sole source of price data for any system where accuracy has financial consequences.

Consumers operating lending protocols, derivatives platforms, liquidation engines, or any system where price data triggers irreversible financial actions should: (a) query multiple independent oracle providers for each asset pair; (b) implement client-side aggregation or quorum logic (e.g., median-of-oracles, minimum agreement threshold) to detect and mitigate single-oracle failures or anomalies; (c) define fallback behavior for scenarios where oracles disagree beyond an acceptable threshold; (d) treat any single oracle's price as an input to a broader validation pipeline, not as a definitive reference rate.

Mycelia Signal publishes its source list and aggregation method in every signed attestation specifically to facilitate this kind of independent verification. The protocol's pay-per-query model is designed to make multi-oracle strategies economically practical at any scale.

## 11. Incident Response

Severity	Acknowledgment	Resolution Target	Communication
Critical (Full service outage)	< 15 minutes	< 1 hour	Real-time status page + email
High (Single pair unavailable)	< 30 minutes	< 4 hours	Status page update
Medium (Degraded performance)	< 2 hours	< 24 hours	Status page update
Low (Cosmetic / monitoring)	< 24 hours	Best effort	Internal tracking

Post-incident reports will be published for any Critical or High severity incident that results in downtime exceeding the monthly allowance. Reports will include root cause analysis, timeline, and preventive measures.

## 12. Planned Maintenance

Scheduled maintenance windows will be announced at least 48 hours in advance and will be conducted during low-traffic periods (typically 06:00–08:00 UTC on weekdays). Mycelia Signal targets zero-downtime deployments for routine updates. When multi-region infrastructure is deployed, maintenance will be performed on one region at a time to maintain continuous service.

## 13. Geographic Redundancy Roadmap

Mycelia Signal is expanding to a multi-region architecture to strengthen availability and reduce latency for global consumers.

Phase	Region	Role
Current	us-central1 (Iowa)	Primary — full stack operational
Planned Q2 2026	eu-west-1 (Belgium)	Replica — European trading hours
Planned Q3 2026	asia-east1 (Taiwan)	Replica — Asian trading hours

Once multi-region deployment is complete, the architecture will support automated failover such that the loss of any single region does not result in service disruption. Cross-region attestation consistency will be monitored, with alerts triggered if price drift between regions exceeds 0.5% or attestation timestamps diverge by more than 60 seconds.

## 14. Governing Law and Dispute Resolution

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### 14.1 Governing Law

This SLA shall be governed by and construed in accordance with the laws of the State of Delaware, United States, without regard to its conflict of laws provisions.

### 14.2 Dispute Resolution

Any dispute, controversy, or claim arising out of or relating to this SLA, or the breach, termination, or invalidity thereof, shall be resolved as follows:

(a) **Negotiation.** The parties shall first attempt to resolve the dispute through good-faith negotiation for a period of thirty (30) days following written notice of the dispute. (b) **Arbitration.** If the dispute is not resolved through negotiation, it shall be finally settled by binding arbitration administered by JAMS under its Comprehensive Arbitration Rules and Procedures. The arbitration shall be conducted by a single arbitrator in Wilmington, Delaware. The language of the arbitration shall be English. The arbitrator's award shall be final and binding and may be entered as a judgment in any court of competent jurisdiction. (c) **Injunctive Relief.** Notwithstanding the foregoing, either party may seek injunctive or other equitable relief in a court of competent jurisdiction to prevent irreparable harm pending the outcome of arbitration.

### 14.3 Prevailing Party

In any arbitration or legal proceeding arising out of this SLA, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs from the non-prevailing party.

## 15. General Provisions

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### 15.1 Entire Agreement

This SLA constitutes the entire agreement between Mycelia Signal and the consumer with respect to the subject matter hereof and supersedes all prior or contemporaneous communications, whether oral or written. This SLA may be supplemented by separate written agreements for enterprise or institutional consumers.

### 15.2 Severability

If any provision of this SLA is held to be invalid or unenforceable, the remaining provisions shall continue in full force and effect. The invalid or unenforceable provision shall be modified to the minimum extent necessary to make it valid and enforceable.

### 15.3 Amendments

Mycelia Signal may update this SLA from time to time. Material changes will be communicated via the developer mailing list and status page at least thirty (30) days before taking effect. Continued use of the service after such notice constitutes acceptance of the revised SLA.

### 15.4 No Waiver

The failure of either party to enforce any provision of this SLA shall not constitute a waiver of that party's right to enforce that provision or any other provision in the future.

## 16. Revision History

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Version	Date	Description
1.0	March 2026	Initial SLA publication

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This document is reviewed quarterly and updated as infrastructure and capabilities evolve.