MCP SERVER | NO CODE | CLOUD HOSTED

NOAA Aviation MCP

Analyze real-time flight conditions and hazards instantly.

NOAA Aviation — Airport Weather Intelligence gives your agent immediate access to critical global aviation weather data. It provides current airport conditions (METARs), 24-hour forecasts (TAFs), and specialized pilot reports on hazards like turbulence and icing. You can also pull significant hazard areas (SIGMETs/AIRMETs) and detailed station info, all using standard ICAO codes.

A+ Quality Score 100/100

metar | taf | aviation-safety | flight-planning | weather-forecasting | pilot-reports

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vinkius.com/mcp/noaa-aviation-airport-weather-intelligence

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

NOAA Aviation — Airport Weather Intelligence MCP

5 tools available
Cloud-hosted on Vinkius

When you need reliable weather data for flight operations or simulation planning, this MCP is your source. It pulls definitive intelligence straight from the NOAA Aviation Weather Center, covering everything from ground conditions to airborne hazards. You don't have to jump between dozens of meteorological websites or decipher complex PDFs; your agent handles it all automatically.

It gathers current METAR reports for any airport worldwide and provides detailed TAF forecasts showing expected changes in wind or visibility over the next day. Beyond basic weather, you can specifically request pilot-submitted PIREPs detailing in-flight turbulence or icing conditions. This specialized data helps flight planners build safer routes. Because this MCP is hosted on Vinkius, your agent has a single point of access to run all these essential checks, letting you focus purely on the mission instead of the data retrieval.

Core Capabilities

01 — Get Current Airport Conditions

Retrieves real-time weather metrics like wind speed, cloud cover, and visibility for a specific airport.

02 — Forecast Future Weather Patterns

Pulls projected weather reports that detail changes in wind, temperature, or precipitation over the next 24 to 30 hours.

03 — Check Pilot-Reported Hazards

Gathers specific data submitted by pilots concerning in-flight issues like severe turbulence or unexpected icing.

04 — Identify Significant Hazard Areas

Retrieves alerts for areas of known, significant aviation dangers, such as widespread thunderstorms or mountainous obscuration.

05 — Lookup Station Details

Provides basic identifying information about a specific airport weather station using its ICAO code.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/noaa-aviation-airport-weather-intelligence** — connect your AI agent in three steps.

01 You provide the MCP with one or more ICAO codes and specify what type of report you need, like current conditions (METAR) or a 24-hour forecast (TAF).

02 The MCP sends your request to the NOAA Weather Center API, filtering out noise and structuring the complex meteorological data.

03 Your agent returns a clear summary containing key metrics—wind direction, visibility, pressure, and hazard flags—ready for immediate analysis.

The bottom line is that you get structured, reliable weather intelligence without writing any API calls or navigating technical documentation.

Built For

This MCP is essential for flight dispatchers, air traffic controllers, and logistics engineers who can't afford to operate on guesswork. If your job involves moving people or goods through complex airspace, you need this data.

Flight Operations Manager

Checks current METARs across multiple airports simultaneously before dispatching a crew, ensuring optimal safety margins.

Logistics Engineer

Runs TAF forecasts weeks in advance to adjust delivery routes based on predicted weather system changes.

Aviation Safety Analyst

Gathers PIREPs and SIGMETs over a specific timeframe to build reports identifying recurring high-risk flight paths.

What Changes When You Connect

01 Get instant visibility into current ground operations by calling get_metar for any ICAO code, eliminating the need to check multiple weather sites for basic metrics.

02 Plan future movements with confidence. Using get_taf allows you to map out expected changes in wind or cloud cover hours before a flight even takes off.

03 Improve safety reporting accuracy by using get_pirep to pull specific pilot reports on turbulence and icing that are crucial for risk assessment.

04 Avoid unexpected delays by proactively checking get_sigmet, which flags significant hazard areas like deep thunderstorm clusters well ahead of time.

05 Save time on setup. Instead of multiple manual lookups, you give your agent one command to retrieve station details and forecasts via the MCP.

Real-World Applications

A dispatcher needs a quick go/no-go call for three different airports.

Instead of manually checking the websites for KJFK, EGLL, and LFPG, you ask your agent to run get_metar on all three. The agent returns comparable current conditions immediately, letting you make a rapid dispatch decision.

A research team is modeling storm impact across a region.

You instruct the agent to pull get_sigmet data for a specific time window and then cross-reference it with historical PIREPs. This builds an immediate, data-backed report on high-risk airspace.

A flight planner needs to adjust a route around predicted icing.

You run get_taf for the entire corridor and ask the agent to flag any sections showing expected temperature drops or precipitation, allowing you to reroute proactively.

An analyst is auditing historical operational risks.

The agent retrieves recent PIREPs over a given period. This allows the team to identify common flight paths that consistently report high levels of turbulence, leading to better safety protocols.

Patterns to Avoid

Using this for general city weather

✗ AVOID

Asking your agent for the 'weather in New York City' and expecting a simple rain/sun forecast.

✓ INSTEAD

This MCP requires ICAO codes. For accurate airport data, you must specify the code (e.g., KJFK) and request specific reports like get_metar or get_taf.

Confusing forecasts with current conditions

✗ AVOID

Relying on a TAF report to determine what's happening right now at the airport.

✓ INSTEAD

Always use get_metar for real-time, immediate operational status. The TAF is only an expectation of future conditions.

Ignoring hazard reports

✗ AVOID

Only checking basic METAR data and missing out on critical warnings about severe weather systems.

✓ INSTEAD

Always include checks for get_sigmet to ensure you are aware of significant, non-routine hazards that could impact safety.

The Right Fit

Use this MCP if your work revolves around professional flight planning, air logistics, or operational risk assessment where precise, standardized weather data is mandatory. Specifically, if you need current airport conditions (get_metar) or forecast changes over time (get_taf), this is the tool for the job. Don't use it if you are simply checking local city forecasts—this MCP only services ICAO-coded airports.

If your primary goal is to analyze historical trends across multiple variables, combining get_pirep data with station info gives you a powerful dataset. But if you just need to know the temperature in a backyard today, this isn't it; you need a general weather service instead.

The Nightmare of Manual Flight Planning

Today, planning a complex flight route means logging into three or four different vendor sites. You pull up the METAR for the departure field, then open another tab for the destination's TAF forecast. If you need to know if there were any recent reports of icing en-route, you have to search through pilot forums and historical PDFs—it takes hours and involves copy-pasting data into a spreadsheet.

With this MCP, your agent handles all that friction. You tell it the origin, destination, and required time window. The system runs get_metar, gets_taf, and checks for any relevant hazard alerts simultaneously. What you get back is one structured summary containing every piece of data needed to make a decision.

Getting Clear Aviation Intelligence with NOAA Aviation — Airport Weather Intelligence

The painful manual steps—switching between different data formats, cross-referencing time zones, and interpreting disparate reports for turbulence versus general visibility—all disappear. You don't interpret the raw codes; you just receive the actionable summary.

Your focus shifts from managing technical data streams to solving complex logistical problems. It’s reliable safety intelligence delivered when and where your agent needs it.

NOAA Aviation — Airport Weather Intelligence: 5 Tools

These tools allow your agent to retrieve definitive aviation weather intelligence, including current airport conditions, future forecasts, and critical pilot-reported hazard data.

#	TOOL	DESCRIPTION
01	`get_metar`	Gets current weather metrics, including wind, visibility, and cloud cover, for any specified airport using its ICAO code.
02	`get_taf`	Retrieves a detailed forecast of expected weather conditions, such as changes in visibility or wind, for an airport over the next 24 to 30 hours.
03	`get_pirep`	Collects pilot-submitted reports on actual in-flight hazards like severe turbulence or icing conditions that have occurred recently.
04	`get_sigmet`	Retrieves official warnings about significant weather areas, such as deep convection or mountain obscuration, affecting air travel.
05	`get_aviation_station`	Fetches basic identifying information and details for a specific airport weather station using its ICAO code.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U Get current weather at London Heathrow and Paris CDG

✈️ METAR Report

GB **EGLL (Heathrow)**
Temp: 14°C, Wind: 270° at 12kt
Visibility: 9999m, Clouds: SCT030
Pressure: 1018 hPa
Condition: Fair

FR **LFPG (Paris CDG)**
Temp: 16°C, Wind: 230° at 8kt
Visibility: 9999m, Clouds: FEW040
Pressure: 1020 hPa
Condition: Clear

U Any active SIGMETs for convection?

⛈️ Active Convective SIGMETs

1. WST 0145 — Central Plains: embedded thunderstorms with tops FL450, hail >1 inch
2. WST 0146 — Gulf Coast: developing line of storms, movement NE at 30kt
3. WST 0147 — SE United States: widespread thunderstorms

3 convective SIGMETs active. Avoid flight paths through these areas.

Frequently Asked Questions

01 **How do I check current weather at London Heathrow using get_metar?**

You must use the airport's ICAO code, which is EGLL. Simply ask your agent to run get_metar for 'EGLL'. The tool returns precise metrics like wind speed and visibility instantly.

02 **Can NOAA Aviation — Airport Weather Intelligence predict icing risks?**

Yes, you can check for this using get_pirep. This tool collects pilot reports specifically detailing in-flight conditions including observed icing events.

03 **What is the difference between TAF and METAR with NOAA Aviation — Airport Weather Intelligence?**

METAR provides the current, real-time snapshot of the weather at an airport. TAF provides a forecast—what conditions are expected hours into the future.

04 **Do I need to know specific codes for get_sigmet?**

No, you just need to ask your agent if there are any active SIGMETs for certain hazard types (like convection). The tool handles the global search for significant hazards.

05 **Does NOAA Aviation — Airport Weather Intelligence support multiple airports?**

Yes. You can list multiple ICAO codes in a single request to get_metar or get_taf, allowing you to compare conditions across several locations at once.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"noaa-aviation-airport-weather-intelligence": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

NOAA Aviation — Airport Weather Intelligence is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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