MCP SERVER | NO CODE | CLOUD HOSTED

Crossfade Time Subtractor MCP for AI Agents

Calculating Overlapping Video Transitions and Final Run Times

The Crossfade Time Subtractor calculates precise video durations and determines necessary raw footage lengths when you use overlapping transitions. When clips fade into each other, time segments overlap, meaning the visible length isn't just the sum of all your individual pieces. This MCP tells you exactly what the final timeline will look like, how much extra source material you need to hit a specific runtime goal, and precisely how many seconds you lost to those fancy junctions. It’s essential math for professional video editors.

A+ Quality Score 100/100

video | crossfade | timeline | duration | editing-tools

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vinkius.com/mcp/crossfade-time-subtractor

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.

Crossfade Time Subtractor MCP

3 tools available
Cloud-hosted on Vinkius

Editing videos with smooth transitions is tricky because of simple mathematics. When clips crossfade, the total time on your timeline shrinks; overlapping segments only count once. You don't just add up all the clip lengths and call it a day. This MCP solves that problem by giving you hard numbers for complex video math.

It lets you determine the actual visible length of a sequence, even after multiple crossfades have run their course. Need to hit a specific 60-second mark? You can figure out exactly how much raw footage you need before transitions are applied. Plus, it delivers detailed reports that analyze precisely how many seconds your beautiful junctions cost you in time.

Instead of manually calculating these numbers on spreadsheets and hoping you don't lose track, you just ask your AI client. Connecting this MCP through Vinkius gives your agent the math skills of a seasoned post-production supervisor. You get reliable data instantly, letting you focus on creative decisions instead of timing calculations.

Core Capabilities

01 — Determine True Sequence Duration

Finds the final visible length of a video sequence after all overlapping crossfades are applied.

02 — Calculate Required Raw Footage Sum

Determines the total sum of raw clip lengths needed to achieve a specific, target video duration.

03 — Analyze Transition Time Loss

Generates detailed reports breaking down exactly how many seconds are lost across multiple transitions and junctions.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/crossfade-time-subtractor** — connect your AI agent in three steps.

01 Provide the MCP with your clip data, including individual lengths and the specific crossfade overlap times.

02 The system processes these overlapping segments to perform complex time subtraction calculations against standard addition.

03 You receive a precise numerical output detailing either the final visible duration, the required raw source material total, or a comprehensive loss report.

The bottom line is that it takes your rough video math and spits out accurate, industry-standard runtime figures you can trust for post-production timelines.

Built For

Video editors, motion graphic artists, and post-production managers need this MCP. If you spend time worrying about whether your final video is too long or too short because of transitions, this tool saves hours of manual math. It gives you reliable timing data when the stakes are high.

Video Editor

Uses the Crossfade Time Subtractor MCP to calculate if a sequence of clips will hit its target runtime after applying multiple overlapping crossfades.

Motion Graphics Artist

Calculates the total raw footage required for a client's desired final length, factoring in specific transition timings and overlaps.

Post-Production Manager

Runs overlap impact reports to give clients an accurate breakdown of time lost across all transitions before starting the edit.

What Changes When You Connect

01 Never guess the final runtime again. Use get_true_duration to instantly find the actual visible length of a video sequence, even with complex overlaps.

02 Hit client deadlines accurately. Get required_raw_sum tells you exactly how much raw footage you need to hit your target duration, saving expensive reshoots or painful cuts.

03 Manage expectations early. get_overlap_impact_report analyzes time loss across transitions, giving clients a clear report on what the overlaps cost.

04 Save manual math time. Instead of building complex formulas in Excel, let your agent handle the heavy lifting for video timing calculations instantly.

05 Improve workflow certainty. By calculating these values upfront, you move from guesswork to precise, professional timelines.

Real-World Applications

Client wants a 90-second trailer but clips are too short

A director needs a final video that is exactly 90 seconds long. They have five existing clips and know they'll use 500ms crossfades between them. The agent uses get_required_raw_sum to tell the director they need about 110% more raw footage to make it work.

Reviewing a sequence with many fades

A video editor has three clips (7s, 5s, 4s) and knows the crossfade is 300ms. They use get_true_duration to confirm that the final visible length won't be 16 seconds but will actually be 15.2 seconds.

Budgeting for footage time loss

A post-production manager needs to know how much time is lost across a 10-clip sequence using varied overlaps (400ms, 600ms). They run get_overlap_impact_report and get a precise total of 'X' seconds lost.

Adjusting the timeline to meet constraints

A team needs a final video that runs exactly 30,000ms. They calculate using get_required_raw_sum and discover they need more source material than initially thought, allowing them time to adjust their shoot plan.

Patterns to Avoid

Adding durations together

✗ AVOID

Assuming a 5-second clip followed by another 5-second clip with a 1-second crossfade results in 9 seconds of footage. This is wrong because the overlap time isn't counted twice.

✓ INSTEAD

Don't calculate it manually. Use get_true_duration to let your agent handle the overlaps, giving you the correct visible length.

Ignoring target runtime constraints

✗ AVOID

Starting an edit and realizing halfway through that the total footage is 10 seconds short of the client's required 60-second mark.

✓ INSTEAD

Before starting, use get_required_raw_sum. This tool tells you exactly how much source material you need to achieve your target duration.

Overlooking transition time loss

✗ AVOID

Building a timeline without analyzing the total time subtracted by 20 different crossfade junctions, leading to an inaccurate final runtime report.

✓ INSTEAD

Use get_overlap_impact_report. It gives you a clean breakdown of every second lost across all your transitions.

The Right Fit

You should use this MCP if your workflow involves complex video timelines where overlaps and crossfades are used, and timing accuracy is critical (e.g., broadcast media, high-end commercials). If you only have simple cuts with no fading or overlapping transitions, then a standard timeline application works fine—you don't need the math complexity of this MCP. However, if you find yourself constantly building spreadsheets to calculate how much raw footage you need for a specific runtime, or trying to determine the final visible duration after fades, this is exactly what you need. Don't use it just because your AI client supports it; use it when the mathematical problem requires calculating true elapsed time under overlapping conditions.

Crossfade Time Subtractor MCP for Overlapping Video Transitions

Manually timing a complex video is brutal. You're adding clip lengths, then subtracting the overlap period for every single junction. It’s easy to miscount one transition and throw off your entire timeline by several seconds—a mistake that looks amateurish when you present it.

With this MCP, you simply ask your agent what the final visible duration will be. You get a precise number instantly, letting you move past the spreadsheet chaos. It gives you immediate confidence in your timing.

Crossfade Time Subtractor MCP for Raw Footage Requirement Calculation

Currently, if a client demands a 3-minute final piece, but your current assets only add up to 2 minutes and 45 seconds, you have to guess how much extra footage is needed. This forces costly re-shoots or compromises the creative vision.

This MCP solves that by calculating what you need. You input the target runtime, and it tells you the exact raw sum of clips required to hit that mark—no guessing involved.

Crossfade Time Subtractor: 3 Video Timing & Duration Tools

Use these tools to calculate true visible runtimes, determine required source material, and report time lost due to overlapping crossfades.

#	TOOL	DESCRIPTION
01	`get_overlap_impact_report`	Analyzes and provides a specific breakdown of how much total time is lost due to various transition overlaps.
02	`get_required_raw_sum`	Calculates the necessary combined length of raw source clips needed to meet a specified final video duration goal.
03	`get_true_duration`	Determines the actual visible runtime of a finished video sequence after all crossfade transitions have been applied.

See It in Action

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

U I'm making a promo reel with 5 clips: 10s, 8s, 6s, 4s, and 3s. The crossfade is always 200ms. What's the total visible time?

Video Duration Analysis

Based on your input (5 clips, 4 transitions at 200ms each):

- Total raw length: 31 seconds
- Total overlap loss: 800ms (or 0.8s)
- **Final Visible Duration: 30.2 seconds**

This calculation is accurate for a smooth, overlapping sequence.

U We need the final video to be exactly 45 seconds long using about 12 clips with 1s crossfades. How much total raw material should we shoot?

Required Source Material Calculation

To achieve a stable **45-second** runtime, considering the overlaps from approximately 11 transitions (at 1 second each), your required raw source footage sum is:

- **Total Required Raw Sum: 63 seconds**

Please ensure all shooting plans account for this total duration.

U Analyze the time lost across these clips and overlaps: [1500, 2000], [3000] with a crossfade of 400ms.

Transition Impact Report

Junction	Overlap Time (ms)
Clip 1 → Clip 2	400 ms
Clip 2 → Clip 3	400 ms
Total Lost Time	**800 ms**

The total time lost to transitions across these two junctions is 800ms.

Frequently Asked Questions

01 **How does the duration calculation work?**

The tool calculates the total sum of all clip durations and then subtracts the cumulative time lost at each junction. The number of junctions is always one less than the number of clips.

02 **Can I use this to plan my footage requirements?**

Yes, by using `get_required_raw_sum`, you can determine exactly how much raw clip length is needed to hit a specific target duration after all crossfades are applied.

03 **What happens if the crossfade duration is too large?**

If the `crossfadeDuration` exceeds the length of any clip in your sequence, the tool will return an error to prevent invalid calculations.

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 `"crossfade-time-subtractor": { "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

Crossfade Time Subtractor 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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