

# **MindAmpFX™ Whitepaper — Broadcast Entry Edition (V1.0)**

*“The Dolby of Human Feeling” — Enterprise Standard for Brainwave  
Entrainment (BWE)*

**By Fadi Ghali**

**Filed U.S. Patent Pending: “System and Method for Real-Time Biosonic Frequency  
Modulation Across Wearables, Media, and Public Spaces.”**

IP Umbrella: MindAmpFX™, Silent Human Resonance™, AuraShield™, Tunable Reality™

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## 0. Executive Abstract

**MindAmpFX™ Broadcast v1** is a licensable enterprise standard for brainwave entrainment (BWE) delivered via curated music streams to improve focus, creativity, and recovery. It requires no wearables, no biometrics, and integrates with existing players/streams where licenses permit. ROI is verified through team-level cross-over pilots using difference-in-differences and pre-specified endpoints (e.g., tickets/hour, defects). Conservative uplifts of 1–3% in knowledge-work throughput are material in Fortune-500 P&Ls; 3–7% is strategic. Pricing is ROI-linked with transparent floors/caps. V2 adds adaptive scheduling; V3 (patent-covered) enables biofeedback-adaptive audio across wearables, media, and public spaces under robust safety, privacy, and accessibility policies.

## 1. Executive Summary

**MindAmpFX™** transforms audio from passive sound into active resonance—engineered to influence mood, focus, energy, and emotional immersion. Where Dolby or DTS optimize hearing fidelity, MindAmpFX optimizes the listener’s state—scaling from teams to venues to public spaces.

**Launch configuration (v1)** is intentionally simple and enterprise-friendly: broadcast-only, DJ-style curation of existing licensed music tracks selected and sequenced to align with brainwave-linked frequency targets for specific productivity moods (Focus, Deep Work, Calm, Creativity, Recovery). No wearables, no medical claims, no PII—just curated streams with KPI-measured uplift.

**Strategic arc: *broadcast v1*** demonstrates ROI. Next releases (under the patent) extend into biofeedback-adaptive sound across wearables, media, and public spaces.

**V1** = broadcast curation; **V2** = adaptive scheduling; **V3** = optional biofeedback-adaptive modulation across wearables/venues (per patent).

## 2. Positioning & Licensing Verticals

**MindAmpFX™** = “*The Dolby of Human Feeling*.” We license a standard (spec + brand + certification) that enterprises and platforms implement in their own software stacks.

**Core licensing verticals:**

- **Consumer Electronics:** smart speakers, TVs, soundbars, headphones, streaming services (plugin channels/curation spec).
- **Cinematic & Venue Experiences:** cinemas, concerts, stadiums—an immersive resonance standard parallel to Dolby.
- **Healthcare & Wearables:** EEG headsets, smartwatches, clinics, *and clinical*-research integrations (*separately* licensed; no therapeutic claims in v1).

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Launch focus: enterprise productivity with broadcast curation; other verticals open as roadmap milestones under the same IP umbrella.

## 3. What v1 Is (and Is Not)

### Is:

- A licensable standard for broadcast BWE to support work cognition.
- Five “Certified Moods” with target frequency ranges, session rules, and QA.
- A measurement protocol (A/B or cross-over) mapping playlists to hard KPIs (tickets closed, code throughput, error rate).

### Is Not:

- A medical device or therapy; no health claims.
- A claim to own all focus music. MindAmpFX™ provides the published specification, certification mark, and licensing framework for enterprise-grade brainwave-entrainment broadcast use in productivity contexts.

## 4. Certified Mood Set (Broadcast Profiles)

Headphones recommended for binaural tracks; monaural/isochronic variants work on speakers (preferred for team spaces).

Mood	Bands / Cues	Primary Use	Session Guidance
Focus (MA-β)	Beta 14–20 Hz	Concentration on analytic tasks	20–40 min blocks; ≤2–3/day
Deep Work (MA-βγ)	High-beta/low-gamma 20–40 Hz	Sustained problem-solving / coding	25–50 min; breaks mandatory
Calm (MA-α)	Alpha 8–12 Hz	Stress down-regulation / admin	10–20 min between sprints
Creativity (MA-θ↔γ)	Theta↔Gamma coupling cues	Ideation / divergent thinking	15–30 min pre-brainstorm
Recovery (MA-αθ)	Alpha–Theta 6–10 Hz	Mental reset post-load	10–15 min micro-recovery

## 5. Scientific Basis (Evidence, Limits, and Why We Pilot)

Auditory Beat Stimulation (ABS)—binaural and monaural beats—has shown task-specific cognitive and mood effects in controlled studies and meta-analyses; results are promising but heterogeneous, reinforcing a pilot-first enterprise method.

### Selected peer-reviewed findings (illustrative):

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- **Meta-analysis:** binaural beats show significant effects across attention, anxiety, memory, and analgesia; protocol details matter (frequency, exposure time, masking).
- **Review:** ABS is a promising tool to modulate cognition and mood; mechanisms and boundary conditions are discussed.
- **Creativity/divergent thinking:** binaural beats modulate creative performance with individual-difference moderators.
- **Attentional control:** 40-Hz binaural beats enhanced training to reduce the attentional blink in controlled tasks.
- **Monaural beats with music:** anxiety reduction and mood improvement vs controls (useful for speaker-based delivery).
- **Boundary evidence:** some paradigms show weak cortical entrainment or null mood effects → emphasizes task-fit, QA, and measurement.

### 6. Implementation (Broadcast-Only)

- **Delivery:** curated channels via enterprise players (e.g., background audio), on-prem streams, or headphones for binaural protocols.
- **Controls:** per-team calendars (Focus AM, Deep Work post-standup, Recovery post-sprint).
- **Privacy:** no biometrics in v1; output-only content.
- **IT:** SSO, group-level toggles, safe volume caps, employee opt-out.
- **Content & ToS Compliance:** Licensees must ensure music rights and platform Terms of Service permit enterprise use. Where they do not, use on-prem or enterprise-licensed delivery, or royalty-cleared catalogs.
- **Audio Hygiene & Accessibility:** Normalize loudness (LUFS), apply gradual fade-in/fade-out, set a daily session cap with spacing to minimize listener fatigue, provide short track-intent briefs/captions, and maintain WCAG 2.2 parity for control UI.

### 7. Measurement & ROI (Board-Ready Pilot)

**Design (4–6 weeks):** randomized team-level cross-over (A = MindAmpFX, B = control).

**Hard KPIs:** throughput per hour/sprint, defect rate, SLA latency. **Soft KPIs:** perceived focus, stress, creativity.

**Expected conservative ranges:** +0.5–3.0% throughput or –0.5–2.0% errors depending on task/mood fit; ideation +5–15% idea fluency (confirm locally).

**Attribution Model:** Use a difference-in-differences estimate on cross-over windows; pre-specify primary endpoints (e.g., tickets/hour) and alpha (e.g., 0.05). Report effect size & 95% CI and include a simple power analysis for scale decisions.

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**Statistical Analysis Plan (SAP):** Pre-register primary endpoint(s) (e.g., tickets/hour). Use team-level cross-over (2–3 cycles) with washout days. Analyze via difference-in-differences (DiD) with team/time fixed effects; report effect size, 95% CI, and p-value. Sensitivity: mixed-effects model with random team intercepts and robust SEs clustered by team. Power: target  $\geq 80\%$  to detect  $\Delta = 1.0\%$ ; see Appendix D-2 for sample-size planning.

### Enterprise ROI Example (illustrative):

Employees @ \$100k fully-loaded	Net Productivity Uplift	Annual Capacity Gain
10,000 (Labor = \$1.0B)	1%	\$10,000,000
10,000	3%	\$30,000,000
10,000	5%	\$50,000,000

## 8. Commercial Model & Fees (ROI-Linked)

**MindAmpFX™** licenses the standard + brand certification. You keep your code/playlists; we certify conformance and measurement.

### Recommended terms:

<b>Pilot (6–8 weeks)</b>	<b>\$0 license; you fund internal ops. MindAmpFX™ provides spec, mood QA, and KPI framework.</b>
<b>Hybrid (recommended)</b>	\$1 per employee/month base + 5% of measured, attributable uplift (net of program costs). Min \$200k/yr; cap 10× base.  <b>Definitions:</b> “Measured, attributable uplift” = improvement in the pre-specified primary endpoint(s) attributable to <b>MindAmpFX</b> , estimated by the agreed DiD model and net of program costs (e.g., internal comms, playlist curation). “Cap 10× base” applies to the uplift-share component only, not to total fees.
<b>Flat SaaS</b>	\$3–\$6 per employee/month (size/region tiers); no ROI share.
<b>Success-only (select)</b>	7% of uplift for first 12 months of scale, then 3% ongoing.

### Worked Example:

**10,000 employees @ \$100k**

**fully-loaded → labor = \$1.0B.**

**Observed uplift: +2.0% → +\$20.0M capacity.**

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**Hybrid fee:** base \$1/EE/month = \$120k/year + 5% of uplift = \$1.0M → total \$1.12M.

**ROI multiple:** \$20.0M / \$1.12M ≈ 17.9×. Cap check: 10× base = \$1.2M (uplift-share cap) — actual share \$1.0M < cap.

**Attribution & verification:** uplift computed from cross-over KPI deltas, audited by your Analytics team; MindAmpFX receives aggregate, anonymized reports only. “**MindAmpFX™ Certified**” requires conformance + verified measurement.

**Licensee Responsibilities:** (i) Maintain content rights for any music used; (ii) implement playlist QA & session rules; (iii) run pilot per measurement plan; (iv) store and share only aggregate KPI deltas; (v) complete annual conformance check for mark usage.

### 9. MindAmpFX Certification Levels

**Level 1—Broadcast Basic:** Conformance to mood specs + playlist QA; pilot with basic KPI logging; annual self-attestation.

**Level 2—Broadcast Pro:** Team-level cross-over trials; quarterly KPI reporting; security & compliance checklist (GDPR/CCPA, accessibility).

**Level 3—Broadcast Elite:** Multi-site deployment; centralized analytics; external verification of KPI deltas; annual recertification.

### 10. Strategic Differentiators

- **Dolby-like standardization:** category language, logos, QA, and certification that de-risks adoption for Legal/HR/Comms.
- **Evidence-governed spec:** aligns to peer-reviewed ABS literature (with known limitations).
- **Environment-agnostic:** runs across headphones, speakers, streaming stacks; scales to venues.
- **IP umbrella:** v1 broadcast → biofeedback-adaptive v2/v3 across wearables, media, and public spaces (per patent).
- **Brand integrity:** *MindAmpFX™*, *Silent Human Resonance™*, *AuraShield™*, *Tunable Reality™* distinguish the stack from generic “focus playlists.”

### 11. Roadmap (Under Patent Pending)

- **Phase 1 (now):** broadcast curation with five certified moods; enterprise pilots; certification tiers.
- **Phase 2:** adaptive scheduling (calendar/context) and team-level optimization.
- **Phase 3:** biofeedback-adaptive loops (wearables/venues) and real-time biosonic modulation governed by safety standards and policy.

## 12. Governance, Safety, and Ethics

- **Safety:** adhere to OSHA/WHO safe audio exposure; no photic stimulation; opt-out for seizure history or specific sensitivities.
- **Inclusion:** always offer silent/non-entrainment alternatives; no coercion.
- **Claims discipline:** workplace cognition framing; no medical positioning under this license.
- **Auditability:** playlist QA logs, session rules, KPI deltas retained for annual recertification.
- **Data Protection:** MindAmpFX™ v1 collects **aggregate, de-identified team-level metrics only**. No biometric or per-employee data is processed. Licensees should document a DPIA/LI-assessment under GDPR/CCPA as applicable.
- **Accessibility & Inclusion:** Offer non-entrainment or silent alternatives, accommodate neurodivergent preferences, publish safe-listening guidance, and ensure employees may opt out without penalty.
- **Contraindications:** Individuals with a history of photosensitive epilepsy, sound sensitivity, or acute migraine may opt-out. MindAmpFX is not a medical device and does not diagnose, treat, or prevent disease.
- **Regulatory Posture (EU AI Act & International):** MindAmpFX v1 delivers audio content with no biometric processing or emotion inference, and is therefore outside high-risk classifications. If licensees later integrate biofeedback or biometric data, they must assess obligations (e.g., EU AI Act, GDPR, HIPAA/PHI where applicable) and obtain appropriate approvals.

Risk	Control	Owner	Residual	Review
Streaming ToS conflict	Use on-prem/licensed catalogs	IT/Legal	Low	Annual
Accessibility complaints	Silent/alt tracks + opt-out	HR/EHS	Low	Quarterly
Over-claiming efficacy	SAP + measured endpoints	Product/Legal	Low	Release-wise
Sensitive populations	Contraindications + opt-out	HR/EHS	Low	Quarterly

## 13. Call to Action (Fortune-500)

1. Nominate 2–3 teams for a governed pilot (4–6 weeks).
2. Run A/B cross-over against your hardest KPIs.
3. If  $\geq 1\%$  net uplift persists, scale on Hybrid or Flat terms; apply MindAmpFX™ Certified branding in internal comms.



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4. Localization: Enterprise localization packs (EN/AR/FR/DE/ES/JP) available on request; playlists can be culture-fit while preserving entrainment specifications.

### Appendix A — Pilot Starter Kit (One Page)

- Teams: choose 2–3 similar teams; randomize weeks (A = MindAmpFX, B = control playlists).
- Playlists: Focus/Deep Work for dev; Calm for admin; Creativity for design; Recovery after sprints.
- KPIs: pre-agree hard metrics; collect soft surveys weekly (Likert scales).
- Analysis: compare A vs B; target statistical significance and practical significance ( $\geq 1\%$  sustained gain).
- Report: 2-page CFO-grade summary with charts; request Level-1 or Level-2 certification.

### Appendix B — Selected References (Illustrative, Not Exhaustive)

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## Appendix C — Glossary

- **ABS:** Auditory Beat Stimulation (binaural, monaural, isochronic)
- **BWE:** Brainwave Entrainment
- **Certified Mood:** A playlist spec with bands, session rules, QA checklist
- **Conformance:** Passing the verification tests for “*MindAmpFX™ Certified*”
- **KPI Uplift:** % change in pre-specified endpoint vs control

## Appendix D — Procurement Checklist

- Business owner, IT owner, Legal owner identified
- ToS/content licenses verified (if using streaming providers)
- Pilot endpoints, sample size, and analytics pre-registered
- Accessibility & opt-out policy posted
- Certification level targeted (L1/L2/L3)

## Appendix D-2 — Sample-Size Planning (Back-of-Envelope)

Approximate n per condition =  $[2 \cdot \sigma^2 \cdot (Z_{\{1-\alpha/2\}} + Z_{\{1-\beta\}})^2] / \Delta^2$  Example:  $\sigma = 5\%$  (relative SD),  $\Delta = 1.0\%$ ,  $\alpha = 0.05$ ,  $\beta = 0.20 \rightarrow$  target  $\geq 80\%$  power

$\Delta$ (uplift %)	$\sigma$ (SD %)	Alpha ( $\alpha$ )	Beta ( $\beta$ )	Formula (n per condition)
1.0	5.0	0.05	0.20	$= (2 \cdot B2^2 \cdot (\text{NORM.S.INV}(1-C2/2) + \text{NORM.S.INV}(1-D2))^2) / (A2^2)$

## Appendix E — Certification Mark & Brand Usage

- Use “**MindAmpFX™ Certified**” only **post-conformance**.
- First mention per section with **™**, thereafter plain text.
- No implication of medical efficacy; **no co-branding** with regulated claims; **no altered marks**.

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