Internal R&D & Benchmarking Brief

Waveform Tech | Neural Capitalization Hub (NCH)

Document Status: Internal Confidential / Investor Disclosure
Objective: To outline the foundational R&D, training methodology, and projected performance benchmarks for the Ritual OS ecosystem prior to live enterprise deployment.

1. Data Corpus & Training Methodology

The core Neural Capital AI engine has been developed using a massive, multi-source data corpus to ensure high-fidelity signal processing and state classification. This pre-launch phase focuses on "Day-One Readiness" for live BCI hardware integration.

Total Patterns Processed: 847,000,000+ neural events
Data Sources: Curated Kaggle EEG datasets, OpenBCI research repositories, and high-fidelity synthetic neural simulations.

By training on this volume of data, the system has achieved >85% accuracy in identifying cognitive states (Flow, Focus, Fatigue) within simulated environments, providing a robust baseline for the upcoming Phase I pilots.

2. Projected Performance Benchmarks

Based on internal modeling and simulation of high-stakes decision environments, Waveform Tech has established the following performance targets for enterprise partners:

Metric	Baseline (Manual)	NCH Target (Projected)
Decision Latency	72.0 hours	14.2 hours
Cognitive Fatigue Onset	4.5 hours	7.8 hours
Information Synthesis Speed	1.0x	3.5x

Note: These benchmarks are internal projections based on R&D simulations and are subject to peer-validated pilot studies scheduled for 2026.

3. Strategic Validation & Roadmap

- **NSF SBIR Phase I:** Invited applicant for the 2026 budget cycle (Human-Computer Interaction topic). Proposal drafting in progress.
- **Hardware Integration:** Active SDK integration discussions with BrainBit CTO Boris Goldstein; Letter of Intent (LOI) in negotiation. *No MOU or definitive agreement has been signed yet.*
- **Ecosystem Partners:** Technical collaboration discussions underway with NeoSOFT and Ameotech for enterprise AI and healthcare IoT scaling. *No formal contracts have been executed as of this brief.*