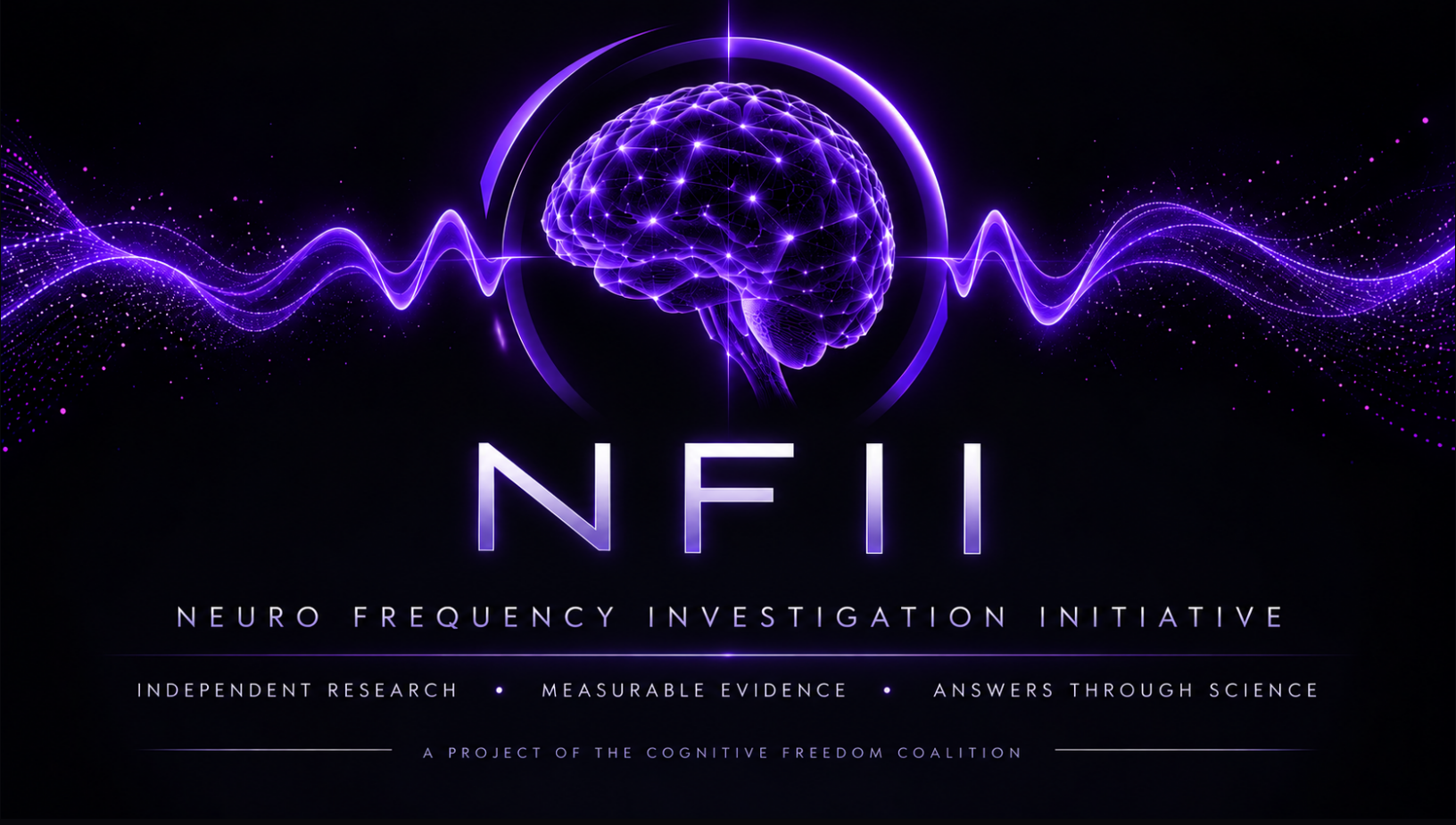


RESEARCH FRAMEWORK / TRACK B

Research Pathway B

Neural and Physiological Event Research

The Research Question

Do participant-reported events correspond with measurable brain or body changes that can be distinguished from artifacts and ordinary variation, reproduced, and compared with independently recorded environmental conditions?

NFII invites investigators to lead independent scientific investigations in collaboration with the initiative. People who describe unusual experiences deserve careful listening and research that can distinguish competing explanations.

Capture reported events. Measure brain and body. Assess artifacts. Compare baseline and controls. Repeat and independently replicate.

Start with the participant guide or investigator brief. The ZIP includes editable templates and a clearly labeled synthetic submission.

START HERE

For Participants

What Track B Investigates

Track B asks whether brain or body measurements change around an experience you report. Researchers may study electrical brain activity, heart rate, breathing, movement, or other measures suited to a specific question. A change does not by itself identify a cause, an external source, or a diagnosis.

Describe the experience in your own words. Auditory, sensory, movement, cognitive, autonomic, visual, balance, and sleep experiences can be logged without assuming an explanation. Your observation and your interpretation should remain separate.

A Simple Event Log

- Record the time and time zone, approximate duration, what you experienced, and what you were doing. Say when a time is estimated.
- During an approved study, use the investigator's event marker if provided. Pressing a button may happen after the experience begins; record this delay when known.
- Use a study code. Keep names, addresses, contact details, and consent records separate from research files.
- Mention relevant activity, device use, sleep, and other context through the study's agreed process. Leave technical measurement fields to the investigator.

Consent Comes First

Downloading this package does not enroll you or authorize sharing your information. Explicit consent is required before NFII provides participant information to an investigator or institution. The investigator determines eligibility, consent, study procedures, ethics review, and withdrawal arrangements.

This is a research planning resource, not a clinical assessment or a self-experiment. It contains no instructions to stimulate the brain, induce exposure, alter medication, or buy equipment. Clinical concerns belong with an appropriate clinician.

A FIVE-MINUTE START / 1 OF 2

Investigator Brief

Human Context and Scientific Opportunity

People report experiences they attribute to remote neural monitoring, directed auditory effects, frequency-based systems, or cognitive interference. Their distress and observations merit careful documentation. Attribution remains a hypothesis to investigate, not a condition of collaboration.

NFII connects questions, consenting potential participants, background resources, and research-sharing infrastructure. A bounded pilot can establish whether events can be captured reliably and whether selected measurements can distinguish candidate changes from artifacts or ordinary variation.

The Core Question

Do reported events coincide with reproducible neural or physiological changes? What alternative explanations fit those measurements? When independent Track A data exist, do the records show a temporal association after clock error, marker latency, background activity, and chance coincidence are considered?

Three Possible Levels

- Ambulatory event capture: selected EEG and supporting physiology, activity context, event markers, and relevant baseline periods.
- Laboratory characterization: a justified assessment using high-density EEG, auditory testing, cognitive or vestibular measures, MEG, fNIRS, fMRI, or sleep methods.
- Synchronized Track A + B: environmental measurements, brain and body records, and participant reports aligned within documented timing uncertainty.

A Useful First Study

Choose one event type, one primary measurement, and a comparison that can weaken as well as support the hypothesis. Establish feasibility before expanding instrumentation. Negative and inconclusive results remain useful when coverage, quality, and limitations are explicit.

A FIVE-MINUTE START / 2 OF 2

Independent Scientific Leadership

Investigator Independence

Investigators retain control of hypotheses, instruments, design, eligibility, enrollment, ethics review, analysis, interpretation, publication, and conclusions. They may modify or replace any approach suggested here. Collaboration does not require endorsement of an attributed explanation.

What NFII Provides Today

The initiative provides a downloadable planning framework, editable logs, a primary-source starter library, clearly synthetic examples, and Workbench snapshots with file storage. Potential participant introductions depend on explicit consent and a suitable study process.

Automated biological-file normalization, signal analysis, event alignment, AI interpretation, and monthly synthesis are future capabilities. They are not supplied by this download or automatically performed by the current Workbench.

An Initial Contribution

- Propose one testable question and the measurement requirements needed to answer it.
- Identify baseline and control comparisons, artifacts, exclusions, and an outcome that would count against the hypothesis.
- State practical requirements: personnel, equipment, consent, ethics, data access, cost, and participant burden.
- Describe replication criteria and what an independent group would need to reproduce the method.

Scope of This Release

This release is a research framework and starter evidence library, not a validated clinical protocol or the complete planned literature review. The evidence matrix identifies reviewed resources and remaining research gaps. No real participant data or institutional study result is included.

01 / PURPOSE AND SCOPE

Two Tracks, One Research Standard

Track A: The Environment

Track A asks whether an external physical signal can be detected, measured, characterized, distinguished from ordinary sources, and reproduced. Its records may include calibrated RF or electromagnetic measurements, instrument settings, source checks, and environmental event times.

Track B: Brain and Body

Track B asks whether reported experiences coincide with measurable neural or physiological changes that survive artifact assessment, baseline comparisons, controls, and repetition. EEG, ECG, respiration, EOG, EMG, movement, and other selected measures describe different systems; none is a universal detector of an attributed mechanism.

Convergence Requires More Than a Shared Timestamp

A combined study brings environment, brain, body, and participant report onto a documented time reference. An environmental signal does not establish a biological effect. A biological change does not identify an external source. Coincidence requires a predefined comparison, competing explanations, and replication before causal interpretation.

Answers Through Science

NFII is a program of the Cognitive Freedom Coalition. Its mission supports human dignity, informed consent, mental privacy, and careful investigation. Scientific evidence determines the claims made. Positive, negative, contradictory, and inconclusive findings all belong in the record.

02 / FROM REPORT TO MEASUREMENT

Participant Events and Capture

Preserve Observation and Hypothesis Separately

Retain the participant's description. Assign an event category only as an organizational aid. A statement such as 'I heard speech without an obvious sound source' is an observation to investigate; 'a particular transmitter caused it' is a proposed explanation requiring separate evidence.

An Ambulatory Capture Plan

A qualified investigator selects recording duration, channels, electrode placement, sampling rate, auxiliary sensors, and event markers for the question. Consult the current ACNS ambulatory and digital EEG guidance [R1]. The four-channel synthetic example is a file-organization demonstration, not recommended clinical coverage.

Preserve the full source recording when consent and retention policy allow. Document outages, electrode quality, impedance checks when used, sensor placement, settings, filters, calibration, and export format. A screenshot or selected epoch alone cannot establish what happened throughout the session.

Event Categories

- Auditory and sensory reports: distinguish what was perceived from the proposed source.
- Movement, cognitive, autonomic, visual, and balance reports: record activity and measurable predictions.
- Sleep reports: use an investigator-designed sleep assessment when justified.
- For every event: record onset, duration, intensity scale if used, timing confidence, context, and any independently available Track A reference.

03 / INSTRUMENTS FIT THE QUESTION

Neural Measures and Laboratory Options

EEG and Supporting Channels

EEG measures electrical potential differences through a specified electrode and reference arrangement. Record the montage, channels, sampling, hardware and software filters, sensor quality, and missing data. EOG, EMG, ECG, and accelerometry can help distinguish ocular, muscular, cardiac, and movement contamination.

Predefine a feature suited to the question, such as a specified event-related response or spectral measure. A change in a scalp trace needs an artifact assessment before it can be described as neural activity. EEG alone does not establish the content or external origin of an experience.

Advanced Characterization

- High-density EEG or MEG may support a bounded laboratory question when suitable expertise and facilities exist.
- fNIRS and fMRI examine hemodynamic signals. Their timing and interpretation differ from direct electrical measurements; motion and physiological context matter.
- Auditory, vestibular, cognitive, or sleep testing should follow an investigator's justified protocol and relevant professional guidance.
- Laboratory escalation needs a clear question, a feasible comparison, and criteria for an interpretable result. More equipment does not automatically resolve attribution.

Evidence Gaps

Detailed modality-specific acquisition and validation reviews remain part of the full literature workstream. This framework does not impose one channel count, sampling rate, analysis method, or clinical procedure on every study.

04 / PROTECT THE INTERPRETATION

Artifact and Confounder Guide

Signals That Can Resemble an Effect

- EEG: blinking, eye movements, facial or scalp muscle activity, cardiac pickup, motion, cable movement, electrode contact, sweat, electrical interference, and recording faults.
- ECG, pulse, and HRV: respiration, posture, activity, sleep, circadian timing, medications, caffeine, stress, and missing or misdetected beats.
- EDA and PPG: movement, temperature, humidity, electrode or optical contact, respiration, and local perfusion context.
- Event markers: delayed reporting, button movement, missing presses, clock resets, drift, and imprecise onset estimates.

A Preservation Chain

RawData → ArtifactAnnotations → ProcessedData → DerivedAnalysis. Retain the original and identify each transformation, parameter, software version, reviewer, and input hash. Keep excluded windows visible in an annotation file. Cleaning must not silently replace source data.

Inspect supporting channels and equipment logs before interpreting a candidate effect. Compare results with and without justified exclusions. No artifact-removal method guarantees a clean neural signal; disagreement and residual uncertainty should remain explicit.

The Included Examples

The artifact example contains a generated ocular transient near a fictional report. The negative example uses a matched baseline and event interval without a generated change. Neither is research evidence; both illustrate why source files, annotations, comparisons, and null results must travel together.

05 / PERCEPTION, RESPONSE, AND SOURCE

Auditory Reports and Testable Layers

Four Distinct Questions

- Acoustic environment: was an ordinary sound present, and what could the selected microphone and calibration detect?
- Peripheral and brainstem function: would an appropriate clinical or research auditory assessment clarify the question? [R6]
- Cortical response: what predefined response could be measured, under what task and comparison?
- Environmental association: did an independently measured Track A event coincide within timing uncertainty?

Keep Three Evidence Categories Separate

Experimental microwave auditory perception, proposed RF-based intelligible speech systems, and community V2K reports are different evidence categories. A patent or proposed system is not a demonstrated deployment. A documented auditory phenomenon does not establish the explanation for a participant's report.

A useful question is whether an auditory report has an observable correlate under a specified assessment and whether ordinary acoustic sources, artifacts, and comparison periods explain it. The present reference library points to primary background resources; it does not complete the waveform, dose, distance, or intelligible-speech feasibility review [R7].

Careful Reporting

Describe the report, instrument coverage, observed response, absent response, and uncertainty. Avoid converting a response into a diagnosis or labeling an unexplained observation as detection of V2K.

06 / DEMONSTRATION AND EXTRAPOLATION

Decoding and Neuromodulation Benchmarks

A Neural-Decoding Feasibility Ladder

Assess each demonstration by sensor type, proximity, signal quality, participant-specific training, cooperation, task constraints, and generalization. Implanted electrodes, scalp EEG, MEG, fMRI, and fNIRS have different acquisition conditions. A result obtained with one arrangement does not establish performance without that arrangement.

A 2023 fMRI language-decoding study required subject-specific training and cooperation [R5]. It provides a benchmark for constrained decoding, not evidence of sensor-free remote thought reading. Review each newer claim against its actual methods and independent replication.

Known Neuromodulation as a Physical Benchmark

A full evidence review should separately assess TMS, tDCS, tACS, temporal interference, and focused ultrasound. Compare the physical coupling, equipment proximity, targeting, measured effect, safety framework, and replication. Focused ultrasound is an acoustic approach; electrical and magnetic methods have different mechanisms.

No stimulation procedure is supplied here. Experimental results must stay tied to their demonstrated conditions. The modality-specific evidence review remains a research gap, rather than an implied validation of a stronger remote-effect claim.

BCI and Future Capability

Distinguish an implemented demonstration from a program objective or speculative future system. DARPA's N3 announcement describes research objectives and proposed approaches [R8]; it does not establish that participant-associated remote monitoring occurred.

07 / A RESULT THAT CAN BE CHALLENGED

Controls, Analysis, and Replication

Build the Comparison Before Reviewing Outcomes

- Choose baseline, non-event, matched control, repeated session, or matched location comparisons suited to the question.
- Specify the primary outcome, event windows, exclusions, artifact rules, and acceptable timing error. Separate exploratory analyses from confirmatory tests.
- Blind analysts to event labels during initial quality review where feasible. Keep the blinding procedure and any unblinding recorded.
- Account for repeated observations, multiple comparisons, and chance coincidence. A sham or randomized condition belongs only in a justified, approved study.

Report the Full Record

Provide effect estimates and uncertainty where appropriate, not only significance labels. Explain missing data, excluded windows, sensitivity analyses, and alternative explanations. A normal or inconclusive result is bounded by what was measured and when; it is not proof that no experience occurred.

NIH's 2024 AHI assessments illustrate multimodal comparison and the value of null results [R4]. Those findings are methodological context, not proof of an NFII hypothesis or an explanation of every report.

Independent Replication

State what another group should reproduce: acquisition conditions, feature, comparison, direction or magnitude, timing tolerance, and analysis. A repeat by the same team is useful but differs from an independent laboratory test. Share enough method and permitted data to allow scrutiny.

08 / ENVIRONMENT + BRAIN + BODY + REPORT

Track A + B Synchronization Guide

Use Two Time Descriptions

Keep session-relative time for signal analysis and an agreed UTC reference for cross-device association. BIDS event onset is in seconds relative to the recording reference; it is not a UTC timestamp [R2]. Preserve both when linking to an environmental record.

For each stream, record its clock, sample rate, start reference, measured offset, drift, synchronization method, and uncertainty. Report onset estimation and button latency separately. A timestamp with milliseconds does not establish millisecond accuracy.

Practical Alignment Options

A shared acquisition clock or recorded hardware marker can offer a testable alignment reference. Lab Streaming Layer can assist networked stream synchronization [R3], but clock correction does not remove every device delay. Characterize instrument latency and record timing metadata. Offline alignment may use known common markers if uncertainty is retained.

Check alignment at the start and end, across interruptions, and after device resets. Define a tolerance before searching for associations. Document any resampling or correction as a derived operation; retain uncorrected source timing.

A Coincidence to Investigate

Inspect the environmental event, report, EEG, physiology, movement, and audio within the documented window. Assess artifacts and baseline/control frequencies of coincidence, then repeat. Report precisely which measurements coincided. Do not automatically label convergence as proof of causation, RNM, V2K, or targeting.

09 / REUSABLE, PERMISSIONED RECORDS

Data Preservation and Submission

Native Files and BIDS

Retain native recordings and export information. BIDS can organize compatible EEG files, sidecar metadata, channels, and events [R2]. It serves a different domain from Track A's SigMF; neither is a universal replacement for the other. Investigators may use established laboratory formats when conversion would disrupt the study.

The included sample uses generated EDF data with BIDS-compatible organization, event sidecars, auxiliary channels, and a separate derived folder. Standard BIDS filenames and columns retain the standard's casing; NFII's editable planning templates use simple descriptive names. A format label alone does not establish signal quality or a valid scientific method.

What to Include

- Source recordings, event log, acquisition and timing context, channel definitions, artifact annotations, baseline/control description, and limitations.
- A derived analysis with named inputs, methods, versions, reviewer, and file hashes; include negative results.
- A privacy and sharing review. Keep identity mappings and consent records outside the scientific package.

Current Workbench

Create a Track B or Combined snapshot and attach permitted files. File contents are stored in the existing private R2 bucket; snapshot and file metadata are stored in the existing database. Choose the appropriate visibility. The public framework route exposes only reviewed download resources, not arbitrary research uploads.

Current Workbench does not automatically parse BIDS, normalize biological recordings, align streams, or interpret signals. Those proposed capabilities require separate implementation and validation.

10 / AN ATTRIBUTED APPENDIX

Community Events and Hypotheses

Translate a Report Into a Question

- Auditory: retain the perceived sound description; examine acoustic context and a justified auditory-response assessment.
- Sensory or motor: retain body location and movement description; consider EMG, accelerometry, context, and baseline.
- Cognitive: retain the reported difficulty or interference; define a task-based measure with practice and fatigue controls.
- Autonomic: retain the reported sensation; compare heart, respiration, or other selected physiology with activity and baseline.
- Visual or vestibular: retain the observation; determine whether a suitable specialist assessment answers a bounded question.
- Sleep: retain reported nighttime timing; consider an investigator-designed sleep recording with synchronized event context.

Hypotheses Are Not Measurements

Keep community reports, advocate theories, patents, research objectives, established technologies, standards, peer-reviewed results, and unresolved observations labeled by source class. These categories do not carry equal evidentiary weight.

For each proposed mechanism, record the predicted measurement, competing explanation, possible test, and falsifying outcome. Preserve the original observation even when an explanation fails. No fabricated community testimony or personal identity appears in these examples.

11 / BEFORE A REAL STUDY

Critical Review and Research Gaps

Questions a Reviewer Should Ask

- Could the candidate EEG feature be ocular, muscular, cardiac, electrode, or electrical contamination?
- Is a physiological change specific to the hypothesis, or consistent with normal activity, arousal, sleep, or medication context?
- Are timing errors, reporting latency, missing data, repeated testing, and chance coincidence adequately considered?
- Does the conclusion exceed the sensor coverage, study design, or actual decoding or neuromodulation evidence?
- What would weaken the hypothesis, justify escalation, or count as independent replication?

What Remains to Be Researched

The starter matrix is not the complete planned evidence review. Expand acquisition standards, ambulatory studies, artifact methods, multimodal physiology, auditory research, sleep, MEG/fNIRS/fMRI, BCI and imagined-speech decoding, neuromodulation, AHI methods, statistical design, and replication. Record supporting and contradicting evidence, limitations, source dates, and review status.

A clinical or neurophysiology investigator should review any actual protocol before use. Templates are planning aids; instrument settings, consent, recruitment, statistical models, and clinical interpretation remain study-specific.

Sample Removal and AI

Every generated sample carries an explicit SampleData label and EXAMPLE identifiers. Workbench sample attachments use IsSample=1 and a bounded Samples/ storage prefix so they can be removed later. Genuine framework documents and blank templates are not sample research records.

Future AI assistance may organize and summarize permitted records. It must not diagnose, establish causation, silently discard artifacts, replace raw files, hide null findings, or convert a coincident measurement into proof of targeting.

12 / SOURCES AND REVIEW STATUS

Primary Reference Starter

Standards and Timing

R1. ACNS. Guidelines and Consensus Statements, including ambulatory EEG guidance (2022) and digital EEG guidance. acns.org/practice/guidelines. Consult the actual guideline for protocol design.

R2. BIDS specification 1.11.2. EEG and Events chapters. bids-specification.readthedocs.io/en/stable/. Reviewed for EDF, sidecars, channels, and event timing.

R3. Lab Streaming Layer. Time Synchronization documentation. labstreaminglayer.readthedocs.io/info/time_synchronization.html. Review device delays as well as clock corrections.

Research and Background

R4. NIH, March 18, 2024. AHI clinical and imaging assessments; no significant differences in most clinical measures or MRI-detectable injury compared with controls. Source link and limitations in references.csv.

R5. Tang et al. (2023). Semantic reconstruction of continuous language from non-invasive brain recordings. Nature Neuroscience 26:858-866. doi:10.1038/s41593-023-01304-9.

R6. ACNS. Guidelines on Short-Latency Auditory Evoked Potentials (2006). A specialist methodological reference, not a participant-specific finding.

R7. National Academies (2020). An Assessment of Illness in U.S. Government Employees and Their Families at Overseas Embassies. doi:10.17226/25889. Background assessment; not proof about NFII participants.

R8. DARPA, May 20, 2019. Six Paths to the Nonsurgical Future of Brain-Machine Interfaces. Research objectives and proposed approaches, not operational attribution.

R9. European Data Format. EDF specification. edfplus.info/specs/edf.html. Reviewed for the synthetic recording example.

Using the Library

Reviewed October 8, 2026. References/ contains direct links, source classes, scoped findings, and limitations. Templates/ contains the blank matrix for the full review. Standards and documentation may change; check the current edition when designing a study. Sources are linked, not redistributed.