OBINexus Brain Interface & Relay Therapy Framework

Overview

The **OBINexus Brain Interface (BCI)** and **Relay Therapy System** is an open research and development initiative designed to support communication and cognitive development for neurodivergent individuals. The project prioritizes **non-invasive** and **ethically aligned** brain-computer technologies that reinforce autonomy, safety, and accessibility.

The system builds on two key components: 1. **Directed Instruction Ontological BCI** – a non-invasive brainwave interpretation framework focused on pre-conscious neural activity and pattern mapping. 2. **Relay Therapy Protocol (Puppet Method)** – a communication and identity-building process enabling non-verbal or minimally verbal individuals to express and strengthen internal states through guided neural and sensory feedback.

Mission

To create a humane, open-source platform that bridges neurological diversity and communication technology through safe, transparent, and compassionate design.

We aim to: - Empower neurodivergent children and adults with tools for authentic self-expression. - Enable caregivers and parents to participate safely in the communication development process. - Provide researchers and clinicians with ethically guided interfaces for study and support.

Core Principles

1. Non-Invasiveness First

All interfaces are designed using surface-level EEG technology and passive signal reading. No surgical or semi-invasive procedures are permitted.

2. Sovereign Communication

Each user maintains complete ownership of their data, identity, and communication output.

3. Relay-Based Learning

The therapy model emphasizes gentle signal feedback ("relay") to help the brain recognize and strengthen neural communication pathways naturally.

4. Ethical Framework

The project follows open governance, peer validation, and family-centered consent protocols in every development phase.

System Components

1. OBINexus BCI Layer

- EEG-based neural data collection using dry electrodes.
- Signal analysis via open-source models for pre-conscious wave detection (200–300ms pre-awareness window).
- Modular architecture supporting visual, auditory, and motor intention mapping.

2. Relay Therapy Protocol (RTP)

- Uses non-verbal feedback mechanisms such as tactile puppets, visual loops, or rhythmic audio to reinforce communication signals.
- Adapts to each participant's natural neural rhythm.
- Encourages expression rather than correction.

3. Parental and Clinical Tools

- Simple dashboards for observing neural response patterns.
- Training materials for at-home or clinical use.
- Encrypted data logging to ensure privacy and security.

Roadmap

Phase 1: Research & Documentation (Q1–Q2 2025) - Publish initial theory and technical architecture. - Create open EEG dataset for neurodivergent pattern mapping.

Phase 2: Prototype Development (Q3–Q4 2025) - Design open-source headset integration. - Implement basic relay feedback protocols.

Phase 3: Community Trials (2026) - Collaborate with families, educators, and researchers. - Test ethical consent, data control, and accessibility models.

Phase 4: Formal Release (2027) - Launch the full open-source platform. - Begin certification and training programs for ethical BCI use.

Intended Users

- **Parents** of neurodivergent children seeking supportive, non-invasive communication tools.
- **Clinicians** and therapists studying autism and neurodiversity communication.
- **Researchers** developing EEG or cognitive interpretation models.
- **Developers** contributing to open, safe BCI infrastructure.

Ethical Standards

The project is bound by: - The **Health and Social Care Act (2014)** for patient protection. - The **NeuroRights Initiative (2021)** ethical guidelines. - GDPR-compliant data protection and full local data sovereignty.

Contributing

We invite contributions from neurodivergent individuals, caregivers, educators, and developers. All contributions must align with the non-invasive and ethical requirements of the project.

To contribute:

```
git clone https://github.com/obinexus/bci
cd bci
```

Submit documentation, prototype code, or field data via pull requests.

Contact

For collaboration or access to research materials: **Email:** research@obinexus.org
YouTube: OBINexus Channel

License

Open under the **MIT License** to ensure universal access, transparency, and ethical innovation.

This project is dedicated to every neurodivergent individual whose inner world deserves clear and dignified communication.