# 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](https://www.youtube.com/@OBINexus/playlists)

## 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.*