1. Introduction

In 1968, the first virtual reality headset was created by inventor Ivan Sutherland. The headset, equipped with a screen, could display simple shapes but remained confined to laboratory testing. In 1991, the video game company Sega developed the "Sega VR," aimed at gaming, but the project was canceled due to the failure of Nintendo's Virtual Boy. Between 2010 and 2012, a revolutionary prototype headset emerged: the Oculus Rift. Its groundbreaking design led to its acquisition by Facebook.In this context I would like to present to you Immersive dream the internet users' headset, a non-invasive headset that uses several advanced technologies such as trans-cranial stimulation, respectful of its users, which will be born from the contribution of internet users.

2. Objectives

1. The headset must enable full immersion of three senses (sight, hearing, touch).
2. The headset must support a wide variety of applications tailored to diverse audiences.
3. Reduce production costs.
4. Obtain legal certifications.
5. Target the general public.
6. Simplify application development and porting by creating an open-source SDK to easily adapt 3D games for the headset.
7. Launch between 2030 (earliest) and 2040 (latest).
8. Advance VR technology.
9. Encourage users to reduce their headset usage and reward them with gifts as upgrades to their personal virtual room

3. Theoretical Connection Process

The user must wear the headset,put on the haptic gloves, lie on a bed, and say the keyword: **"Connection."**The system activates EEG sensors to analyze brain activity, enabling adaptive stimulation. Targeted low-intensity tACS (transcranial alternating current stimulation) is applied to specific brain regions: the dorsolateral prefrontal cortex, somatosensory cortex, and visual/auditory cortex. A light-field display and real-time spatial audio system, adjusted via EEG neurofeedback, induce an altered state of consciousness. Simultaneously, inhibitory stimulation of the motor cortex prevents physical movement without disrupting vital functions in the real world.

4. Theoretical Disconnection Process

To disconnect, the user presses a button in the application's interface. The headset verifies the user's readiness for a safe disconnection. Physiological stability and motor functions are

restored gradually, with sensory stimuli fading gently to allow a gradual awakening. If the system detects danger (e.g., unconsciousness), it immediately terminates stimuli and stimulates the brain stem for rapid awakening. An emergency disconnect feature is accessible at all times via the mobile app.

5. Technologies Used

EEG	OpenBCI Ganglion/Cyton	256 channels (or reduced), 1000 Hz, 24-bit, 10-20 montage, Bluetooth communication
tACS Stimulation	Custom integrated circuit	10 Hz, 1 mA, 20 ms pulses, clinically validated safety
VR Display	Dual OLED 4K per eye	7680 x 2160 total resolution, 120 Hz refresh rate, optional light-field compatibility
Immersive Display	Light Field (preconfigured, disabled by default)	Realistic depth rendering without additional hardware; future activation possible

Haptic Gloves	Proprietary design, Bluetooth 5.2	Precise tactile feedback (texture, pressure), integrated battery, dedicated API
Biometric Sensors	PPG, oximeter, temperature, GSR	Full monitoring, stress/fatigue detection, local processing, no cloud data storage
Data Security	AES-256 + HSM	Local encryption, auto-deletion after 24h, GDPR compliance
Emergency Disconnect	Physical button + EEG fail-safe	Full shutdown upon cognitive overload or unconsciousness detection
Developer SDK	Open Source, Python/Unity/Unreal	Clear API, video tutorials, quick-start guide, structured Git repository

6. EEG Comparison Table

EEG Model	Accuracy	Frequency	Price (Est.)	Channels	Pros	Cons
OpenBCI Ganglion	High	256 Hz	300€	4	Open-source, well-documented	Fewer channels
NeuroSky MindWave	Medium	512 Hz	100€	1	Highly accessible	Low precision
Emotiv EPOC	High	128 Hz	800€	14	Multi-channel, rich SDK	High cost, not open-source

7. Collaborative SDK (by Internet Users)

Parental Controls
Available via the mobile app, allowing parents to block/allow content and monitor minors' activities.

8. Activity Log (by Internet Users)

Tracks user status and records instances of danger via the mobile app.

9. Headset Design (by Internet Users)

10. Brain Regions Stimulated by Immersive Dream

Dorsolateral Prefrontal Cortex	tACS (10 Hz, 2 mA)
Somatosensory Cortex	tACS (5–20 Hz, 1 mA)
Visual/Auditory Cortex	EEG neurofeedback + 4K OLED display

11. Safety

Brain Data	Encrypted via AES-256 and GDPR-compliant to prevent hacking; no sale of data.
Pain	Physical impacts are minimized; users feel reduced sensory feedback.
Health Advice	The headset provides health tips to users.
Content	Blocks dangerous content.
Medical Standards	Complies with medical norms.
User Consent	Explicit consent required for major actions; renewed monthly (optional opt-out).

12. Certification Standards

Europe

- **CE**: Compliance with EU safety, health, and environmental requirements.
- **ISO 13485**: Medical device standard, reassuring even for non-medical use.
- **EN 60601-1**: Electro-medical equipment standard (applies to brain stimulation).
- **EN 62304**: Ensures software reliability (e.g., tACS/EEG management).
- **GDPR (EU 2016/679)**: Mandatory for EEG data encryption, anonymization, and deletion.

United States

- **FDA Class II**: Required if used for therapeutic purposes (rehabilitation, relaxation).
- **FCC**: Mandatory for Bluetooth/Wi-Fi devices (ensures safe interference levels).

International

- **IEEE 11073**: Ensures interoperability with health IoT devices.

- **ISO/IEC 27001**: Demonstrates high-level data security compliance (optional but recommended).

13. Advantages Over Competing Headsets

Current Headsets	The Internet users' helmet
Limited to sight/sound immersion	Advanced sight, sound, and touch immersion
Often uncomfortable	Lightweight materials
Injury risks from real-world movement	Reduced real-world injury risks
Expensive multi-sensory setups	Affordable headset + haptic gloves suffice for 3 senses

14. Prototypes (by Internet Users)

User Interface

Home Screen	A virtual room with a touchscreen similar to a computer.
App Menu	All applications include a mandatory disconnect button.
Customization	Fully customizable interfaces.
Parametric Filters	Content filtering based on user data (with consent).

Pricing (by Internet Users)

The headset should be priced lower than current models, potentially sold at a loss with later monetization.

Ethics Committee (by Internet Users)

Jurists and neuroscientists from the online community will oversee ethical compliance.

15. Future Innovations (by Internet Users)

- Olfactory Stimulation
- Bidirectional BCI
- Hybrid Reality
- Emotional AI

16. Needs

| **Personal Need** | Personalized virtual space for users. |
| **Social Need** | Global communication capabilities. |

Safety Need	Secure, instant disconnection.
Medical Need	At-home medical experimentation via apps.
Educational Need	New learning perspectives (e.g., virtual art or weapon training).
Work Need	Virtual offices for remote collaboration.

17. Usage Scenarios

First Use	Calibration requires user input (e.g., religion for content filtering, session duration). Users can disconnect during setup.
Gaming	Full sensory immersion: touch weapon weight, hear environments, see vivid game worlds.
Work	Companies create private virtual offices for remote employees.
Medicine	Virtual therapy and medical training apps.
Sports	Multi-user fitness applications.
Education	Visit historical sites or extinct ecosystems.
Real-world Tours	Virtual travel for those unable to visit physically.
Skill Learning	Interactive tutorials via apps.

18. Virtual Worlds

User-created 3D worlds, installable online (games, apps, etc.).

19. Unchangeable Elements

- **Key Features**: Stimulation of sight, sound, and touch via visual, auditory, and somatosensory cortices.
- **Security**: AES-256 encryption, emergency auto-disconnect, 24h data deletion.
- **Ethics**: Configurable censorship filters (based on user data). No dopamine overstimulation. Five-hour usage limit.
- **Applications**: Open-source SDK for all.

20. Document Terms

- Commercialized versions must align closely with this document.
- Credit the original document.

21. Contribution Policy

- Users may create improved versions, dev kits, websites, or translations.
- Users may commercialize their versions.
- You can do anything to improve the concept create prototypes even the helmet as long as you do nothing harmful and inappropriate

22. Terms of Use for the Internet users helmet

General Use
Avoid using the headset when fatigued or unwell.And users should not lie about their personal information to deceive others

Age Requirement
Minimum age: 14 years. Parental controls enforce session time limits.

Privacy
Sensitive data requires consent and is stored securely. Users may delete data at any time.

Mental/Physical Health
Overuse may cause brain fatigue. Users must recognize virtuality.

Censorship Filters
Blocks content conflicting with user beliefs (configurable).

Content Warnings
Users are warned before accessing inappropriate experiences.

Consent
Explicit consent required for updates; users may revoke consent.

Misconduct
Repeated violations trigger warnings, forced educational videos, or temporary bans.

Updates
Regular updates to improve the system.

Sales Rights
Sold as a one-time purchase with a 3-year warranty. Resale permitted.

Emergency Disconnect
Activates if the user cannot disconnect manually.

Manufacturer Liability
Liable only with proof of headset-related harm.

Legal Compliance
Adheres to international laws; users must follow local regulations.

Testing
Testers follow rules set by the manufacturer.

Developers
Dev kits provided; apps must include a disconnect button.

23. Sources

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8. Maslen et al. (2014): *Ethical issues in neuroenhancement.*
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14. Slater & Sanchez-Vives (2016): *The future of immersive technology.*
15. Wolpaw et al. (2002): *Brain-computer interfaces for communication and control.*

24. Conclusion

This headset must be developed collaboratively by Internet users. Virtual reality is the future, and this project allows citizens around the world to immerse themselves in imaginary worlds, acquire practical skills and much more. For my part, I will stop working on it after the publication of this document, I think I will be there to answer your questions. I really encourage global collaboration.

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