GAMES FOR HEALTH EUROPE

2026

DISCLOSURE SLIDE

for presentations at the

GAMES FOR HEALTH EUROPE 2026 CONFERENCE

I herewith confirm that there is not any conflict of interest with the conference organization or any of its sponsors.

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Neuroadaptive Games:

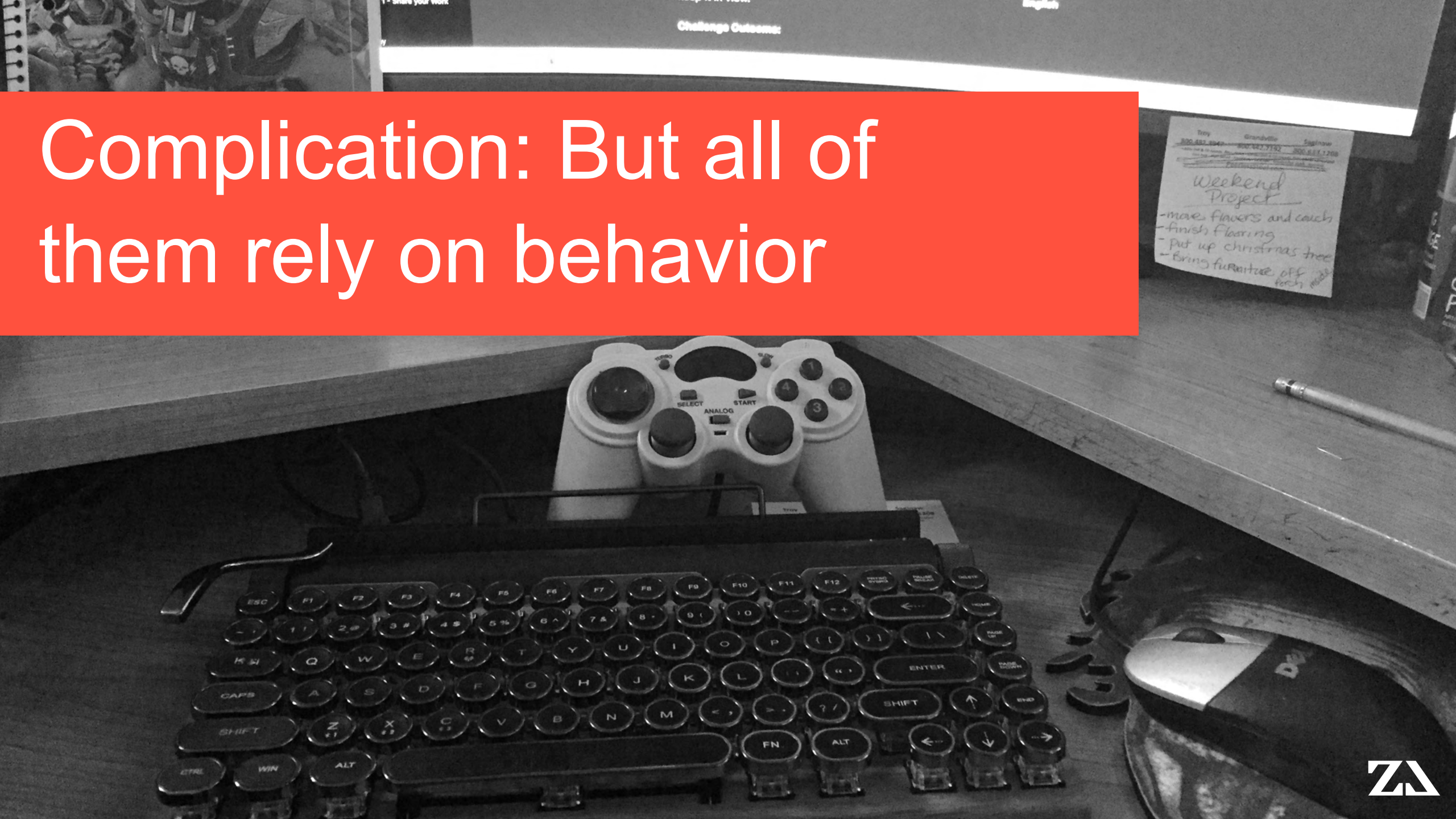
From mental state sensing to meaningful interaction

Resident Evil 4


Witcher 3


The Last of Us

Complication: But all of them rely on behavior



Behavior/Context

Adaptation

Heuristics

many missed shots → decrease difficulty

Intelligent Agents (LLM)

“We adapt to what people do, not to what they experience.”

We believe in going to the source of experience: the human brain.

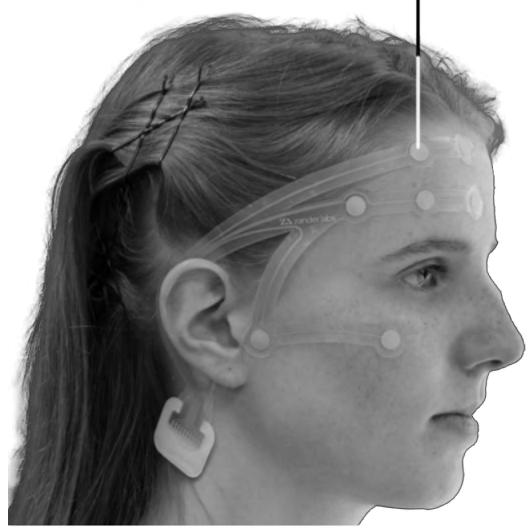
Behavior/Context

Adaptation

Heuristics

many missed shots → decrease difficulty

Intelligent Agents (LLM)



From behavioral to cognitive labels

Behavioral

- Clicks / Button press
- Failed level
- Missed shots

Behavior describes outcomes.

Cognitive Labels

- High workload
- Confusion
- Exploration strategy

Cognitive labels describe mental context.

From to cognitive labels to insights

Cognitive Labels

- High workload
- Confusion
- Exploration strategy

Cognitive labels describe mental context.

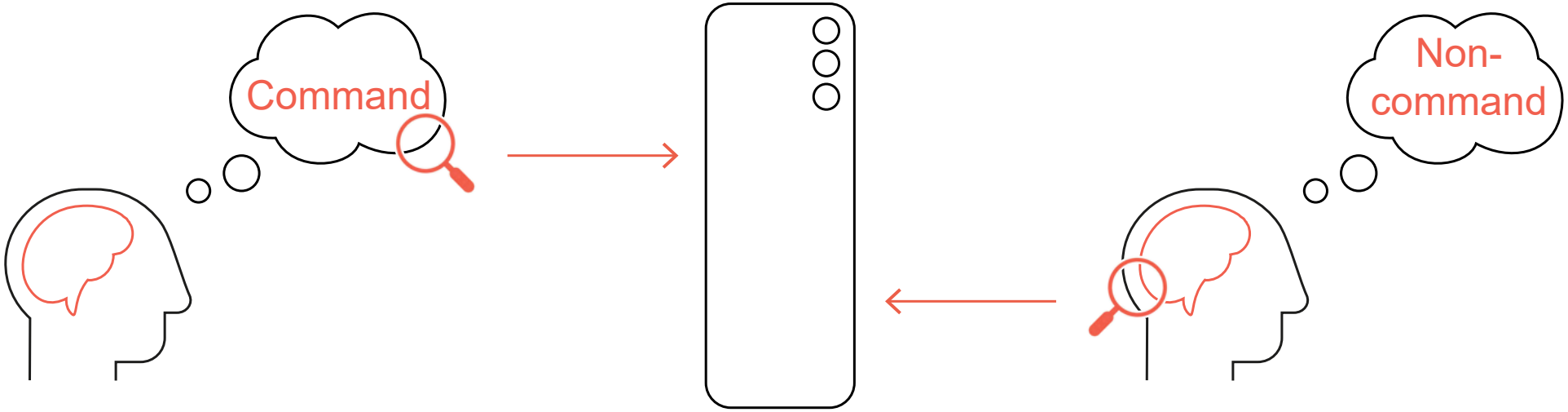
Cognitive Insights

- Cognitive state reveals how and why
- Exposes strategy shifts, effort, and internal load
- Detection of disengagement before errors occur

If behavior is incomplete, can we estimate mental states in real time:
passively, continuously, and robustly?

Brain-Computer Interface (BCI)

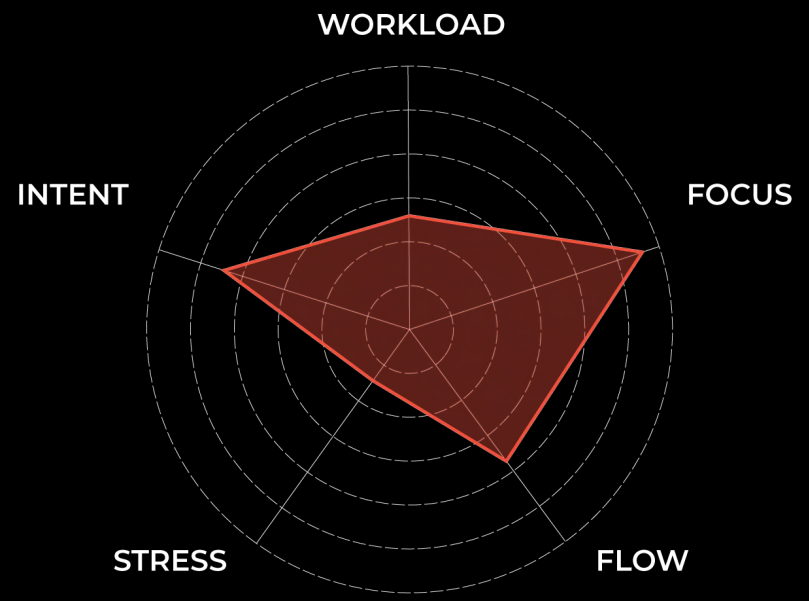
Active vs. Passive BCI



Explicit communication

Implicit communication

Brain data



Mental state detection

Main challenges to solve

1. **Generalization** Across Users: Models struggle to work reliably across **different users** without personalization
2. User Experience & **Wearability**: **Comfortable**, quick to set up, and robust in real-world use
3. Trust, Ethics, Privacy: Users need **transparency** and control when systems interpret their internal state

PROJECT NAFAS: MAIN COMPONENTS

Large database of EEG data
shared with scientific community

Cyber-security chip

Universal classifiers

TOOLS
(Compatible with Brain Privacy Framework)

Mobile EEG Suite

Database

Multi-dimensional mental state

Neuroadaptive HCI

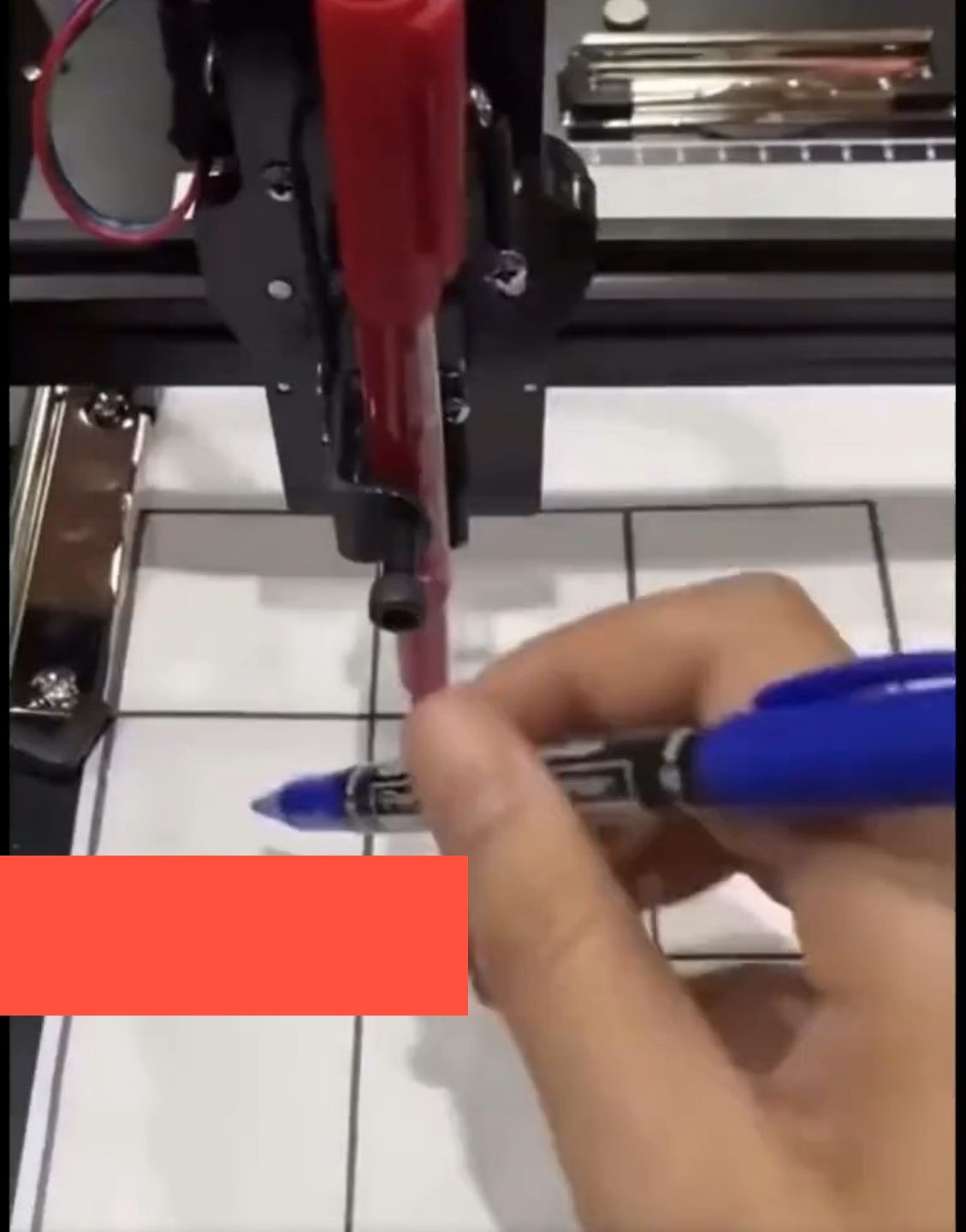
Neuroadaptive AI

Cybersecure pBCI-on-a-chip

Workload

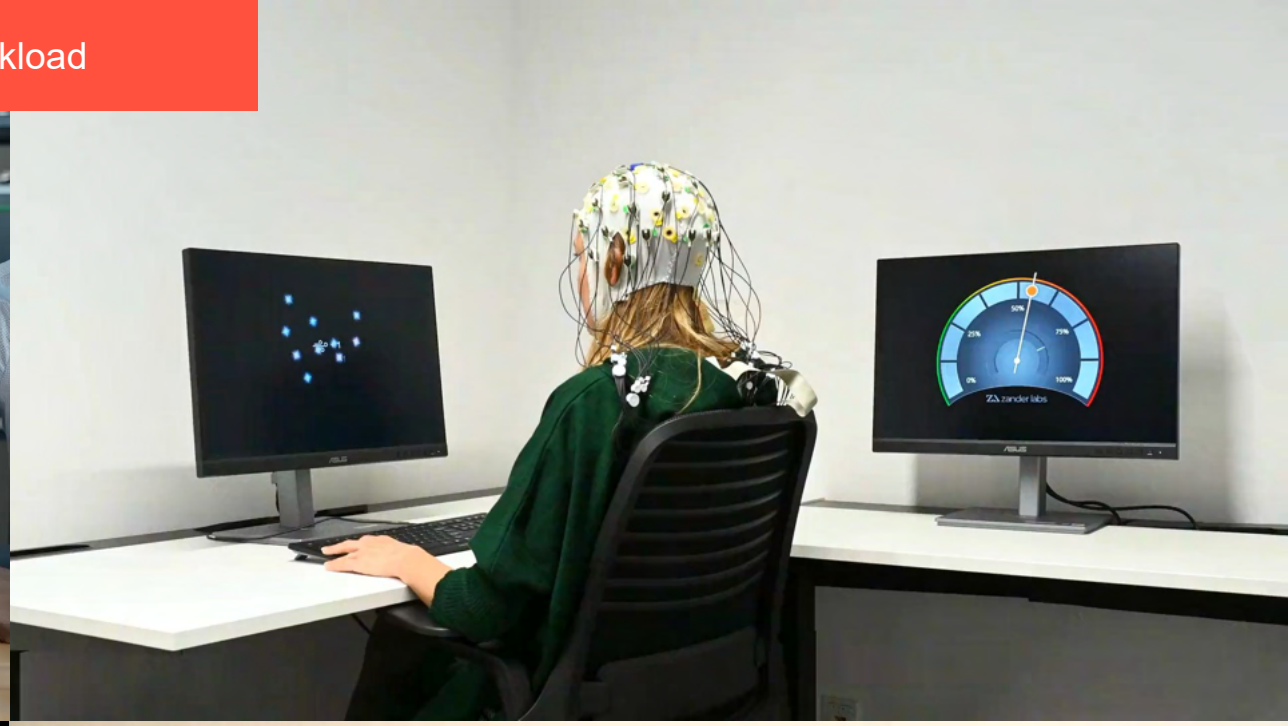
Focus

Flow



Error

Workload



Error

Applications

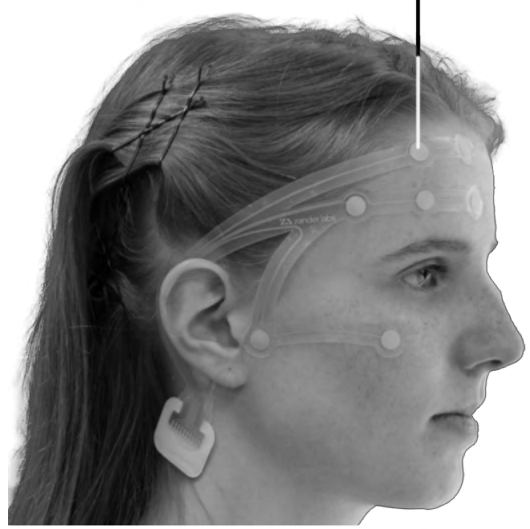
Behavior/Context

Adaptation

Heuristics

mental state change → decrease difficulty

Intelligent Agents (LLM)




Level: 3
Score: 2300
Slow Effect: 1.08
Clear Timer: 3.00s
Focus Level
0.9160404
Focus 91.60403%
Clear Progress 50.66663%
/SUS

Real Virtual Magic

- Experience magic “as real”: A game that allows direct influence of mental abilities on the virtual world
- “Focus” is measured using passive BCI and influences magical abilities in the game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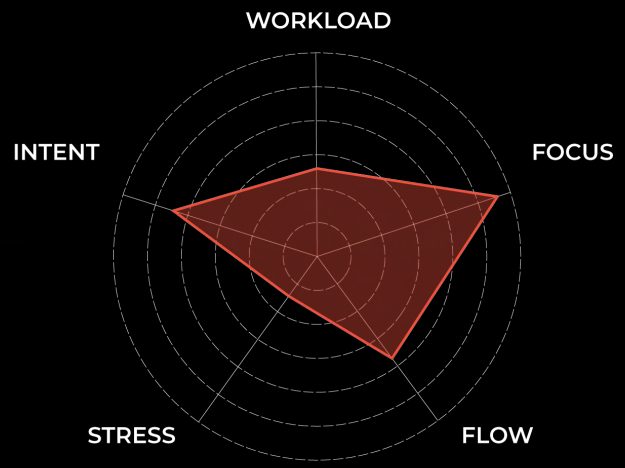
The next step



- Real-time human alignment
- Safer autonomy
- Adaptive task execution
- Faster training & tuning

Brain data

Mental state detection

Implicit adaptation & AI learning

By incorporating human values, logic, and skills, we're developing human-compatible AI that is more accurate, reliable, and capable of handling complex scenarios with human-like intuition.

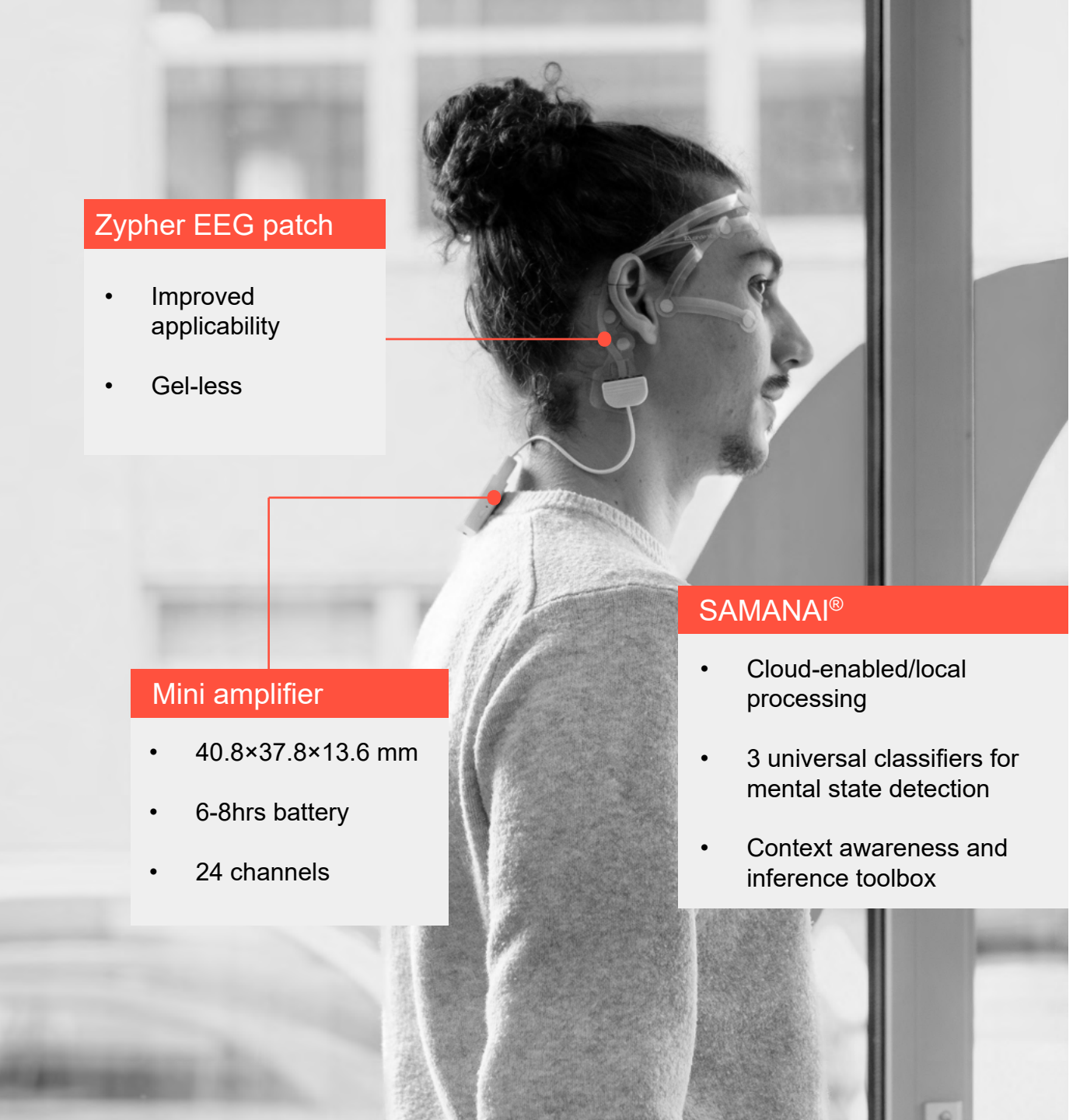
From research artifacts to infrastructure

Historically, neuroadaptive systems stayed in labs.

Barriers:

- Fragile hardware
- Poor signal quality outside controlled environments
- Offline analysis pipelines
- Limited real-time robustness

To move forward, we need infrastructure, not experiments.



Zypher EEG patch

- Improved applicability
- Gel-less

Mini amplifier

- 40.8×37.8×13.6 mm
- 6-8hrs battery
- 24 channels

SAMANAI®

- Cloud-enabled/local processing
- 3 universal classifiers for mental state detection
- Context awareness and inference toolbox

Product launch

In Q2 2026, we are launching our first fully integrated pBCI suite:

- Zypher EEG patch (V2)
- Zypher Mini amplifier (V1)
- SAMANAI® infrastructure

Deployable in 2026 to train AI systems by unlocking human-brain insights.

Responsible neuroadaptation

Mental-state data requires responsibility.

Key principles:

- Privacy by design
- Transparency of adaptation
- User agency
- Avoid manipulative optimization
- Support autonomy

Neuroadaptation must enhance human capability without overriding it.

Thank you!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