

Mentalab × PLUX Research Innovation Challenge 2026

Call for Project Proposals:

Mentalab and PLUX Biosignals invite researchers to submit proposals for the Mentalab × PLUX Research Innovation Challenge 2026 - an equipment access programme designed to support innovative research at the intersection of wearable EEG, multimodal physiological sensing and real-world human behaviour.

The selected project will receive access to Mentalab Explore Pro together with a PLUX Biosignals PRO hub and an agreed configuration of biosignals PRO Smart Sensors and accessories, plus structured onboarding for both systems.

We are looking for ambitious projects that move neuroscience beyond the laboratory and demonstrate how synchronised measurements of brain activity, physiology, and behaviour can provide new insights in naturalistic, interactive, or ecologically valid environments.

Call Opens: 15 October 2026

Application Deadline: 15 December 2026 at 23:59 Central European Time (CET)

Winner Announcement: January / February 2027

Project Duration: Six months from the agreed project start date

1.1. Mentalab and PLUX Technology

Mentalab Explore Pro

The [Explore Pro](#) is a wearable, research-grade EEG and biosignal recording system designed for mobile and naturalistic neuroscience research. It can record high-quality EEG while participants move freely, with wireless data streaming via Bluetooth to a computer or mobile device. The system also supports wired recording for applications where higher sampling rates or a direct connection are preferred, and provides access to raw data for flexible analysis and integration into existing research workflows.



The Explore Pro is available in 8-, 16- and 32-channel configurations, with up to 64 channels possible using two synchronised 32-channel systems. Depending on the project, the system can be configured with gel or dry electrodes and different sized EEG caps, allowing researchers to select the setup that best fits their study design. The same amplifier can also be used to record other biosignals, including EMG and ECG, when required.

For multimodal and multi-participant studies, Mentalab's Hypersync system allows multiple Explore Pro devices to be synchronised wirelessly with sub-millisecond timing. The Explore Pro also supports Lab Streaming Layer (LSL), making it possible to synchronise EEG with other LSL-compatible devices and experimental systems in real time.

The Explore Pro provides open access to recorded data in standard formats including CSV and BDF, and can be integrated into custom workflows through the explorepy Python API. It is also compatible with established neuroscience tools such as MNE-Python, EEGLAB, BrainFlow and PsychoPy, allowing researchers to analyse and process their recordings using the tools they already work with.

The selected team will receive an Explore Pro system configured for their project, together with the necessary accessories and software access. Mentalab will also provide onboarding and technical support to help the team get the system set up and running.

This challenge is intended for projects that can benefit from high-quality, mobile EEG and synchronised multimodal physiological data. Applicants should consider whether mobile EEG is relevant to their research question and study design before applying.

PLUX biosignals PRO:

The [biosignals PRO](#) is a wearable multimodal physiological sensing device that can connect wirelessly via Bluetooth to a computer or mobile device, supporting data acquisition both inside and outside the laboratory. It also includes internal data storage through a removable microSD card, providing a secure backup of recordings if the Bluetooth connection is unstable or interrupted, and supports scheduled recordings for planned study sessions.



The biosignals PRO can acquire and synchronize data from up to 10 Smart Sensors within one device. This enables, for example, simultaneous recording of ECG, respiration, GSR and SpO2, while leaving up to six additional sensor inputs available for other relevant physiological measurements. Depending on the project, the biosignals PRO configuration may include Smart Sensors for ECG, EMG, GSR, EGG, EOG, IMU, SpO2 and respiration, together with the necessary electrodes, cables, chargers and other accessories.

Its MotionScore feature helps researchers assess whether a change in the recorded data is likely to reflect a physiological response or may be associated with movement. Off-lead detection can also identify when a sensor loses contact, helping researchers address the issue without needing to restart the full recording session.

The selected team will also receive a six-month Premium licence for biosignals Studio. The software supports data visualisation and post-processing, including the use of processing modules, so researchers can analyse their recordings without needing to build a processing workflow from scratch. For teams that prefer to integrate the data into their own workflow, PLUX also provides open-source APIs that can be used with custom code.

This challenge is intended for projects that can benefit from synchronised EEG and multimodal physiological sensing. Applicants should consider whether this combination is relevant to their research question before applying.

1.2. About the Challenge

Much of neuroscience and human-subject research is conducted under highly controlled laboratory conditions. While these environments provide important experimental advantages, they can limit our ability to understand how the brain and body respond to the complexity of everyday life.

The **Mentalab × PLUX Research Innovation Challenge** aims to support researchers who want to bring wearable, synchronised, multimodal neurophysiological measurement into more naturalistic settings.

We are particularly interested in projects that combine **wearable EEG with multimodal physiological or biosignal measurements** to investigate questions related to:

- Attention, perception, and cognitive processing
- Cognitive workload and mental effort
- Stress, arousal, and emotional responses
- Social interaction and communication
- Learning and skill acquisition
- Human–computer and human–environment interaction
- Movement, sport, and physical performance
- Decision-making in dynamic environments
- Occupational and workplace behaviour
- Neuroergonomics and real-world cognition
- Other applications where multimodal wearable measurement can provide novel scientific insight

The challenge is intentionally open to different research disciplines and experimental approaches. What matters most is that the proposed project makes a compelling case for why both EEG and the selected physiological measurements are needed and how their synchronised use will answer the research question.

We are particularly interested in projects that demonstrate the scientific value of combining wearable EEG with physiological and behavioural measurements outside traditional laboratory settings.

Strong proposals may, for example, investigate:

Brain + physiology:

How do neural and autonomic responses change together during demanding or emotionally salient tasks?

Brain + movement:

How does cognitive state interact with physical activity, movement, or performance?

Brain + environment:

How does the brain respond to complex, dynamic, and unpredictable real-world environments?

Brain + interaction:

How do neural and physiological states change during social, collaborative, or human–computer interactions?

Brain + workload:

Can multimodal physiological measurements provide a more complete picture of cognitive workload than EEG or behavioural measures alone?

These are examples rather than restrictions. We encourage applicants to propose original research questions that make a strong scientific case for multimodal wearable measurement.

2. Who Should Apply?

The challenge is open to researchers and research teams worldwide (subject to applicable export and shipping restrictions), including:

- MSc and PhD students
- Postdoctoral researchers
- Academic faculty
- Research scientists
- HCI and human-factors researchers
- Sports and performance researchers
- Biomedical engineers
- Cognitive scientists and psychologists
- Applied neuroscience teams
- Independent research laboratories
- Innovation and R&D groups

Researchers from fields including **neuroscience, psychology, cognitive science, biomedical engineering, human-computer interaction, neuroergonomics, sports science, physiology, and related disciplines** are encouraged to apply.

Projects may be experimental, observational, or applied, but should make meaningful use of **wearable EEG in combination with PLUX biosignal measurements** in a real-world, naturalistic, or semi-naturalistic environment.

3. What the Winner Receives

The selected project will receive a six-month equipment-access package from Mentalab and PLUX. The devices will be supplied in early 2027, on a date agreed with the winning team. Applicants should state their preferred project start month within early 2027 in their roadmap, so that delivery can be aligned with their availability and preparations.

Equipment Access

The winner will receive access to:

Mentalab

- Mentalab Explore Pro wearable EEG amplifier (8/16/32-channel; 64-channel available as a 2 × 32-channel setup)
- Choice of dry or wet/gel electrode configuration
- EEG cap in the appropriate size
- Elastic cap
- Protective/shockproof carrying case
- USB charging cable
- USB isolator
- Electrode gel/paste and cleaning kit
- Full access to Mentalab software and API
- All necessary accessories for wearable EEG data collection

PLUX Biosignals

- **A biosignals PRO hub** with 10 hybrid inputs.
- An appropriate configuration of **biosignals PRO Smart Sensors**, selected according to the requirements of the proposed study. Available options include:
 - ❖ Smart Sensor: Electrocardiography (ECG) - Single Lead
 - ❖ Smart Sensor+: Electrocardiography (ECG) - 6 Lead
 - ❖ Smart Sensor: Electromyography (EMG)
 - ❖ Smart Sensor: Galvanic Skin Response (GSR)
 - ❖ Smart Sensor: Electrogastrography (EGG)

- ❖ Smart Sensor: Electrooculography (EOG)
 - ❖ Smart Sensor: Inertial Measurement Unit (IMU)
 - ❖ Smart Sensor+: Blood Oxygen Saturation (SpO2)
 - ❖ Smart Sensor+: Respiration
- The necessary accessories for the agreed measurement configuration, including relevant electrodes, cables and chargers.
 - A six-month Premium licence for biosignals Studio, which enables visualisation, organisation and post-processing of the acquired biosignals data.

The exact biosignals PRO configuration will be determined jointly with the winning team based on the scientific requirements of the proposed project. The award does not include every sensor listed above; it provides the configuration most appropriate for the selected study.

Onboarding

The winning team will receive structured onboarding for the Mentalab and PLUX hardware and software, including guidance on the agreed recording workflow and synchronisation approach.

Visibility & Dissemination

The winning project will also receive opportunities to showcase its research through:

- A featured presentation in the Mentalab webinar series (MentaLABS)
- Promotion through Mentalab and PLUX communication channels
- Potential features on company websites and social media
- Opportunities to present the project and its findings to the broader research community
- Potential opportunities for future scientific collaboration

Any public communication or dissemination involving project results, images or videos, participant or researcher quotes, institutional names or logos will be subject to prior approval and any relevant permissions or consents required from the project team, participants, institutions, or other applicable parties.

4. Application Requirements

Applicants must submit **one PDF of no more than two pages**, excluding references and figures where necessary.

The proposal should contain the following sections:

A. Study Summary

Maximum 250 words

Clearly describe:

- The research question and primary objective
 - The scientific motivation
 - Why wearable EEG and additional biosignal measurements are necessary
 - What cannot be adequately captured using conventional stationary laboratory methods
 - The expected contribution of the project
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B. Methods & Experimental Scenario

Describe:

- Research hypothesis or primary research aim
- Participant population and approximate sample size
- Experimental design
- Real-world, naturalistic, or semi-realistic environment
- EEG measurements
- Physiological/biosignal measurements
- Behavioural or performance measures
- Planned synchronisation approach
- Planned analysis strategy

Data protection note: Applicants must not include any identifiable participant or patient information, or any other sensitive personal data, in their proposal. Any information relating to study participants should be presented only in an anonymised or aggregated form.

Applicants do not need to have a fully finalized technical pipeline at the application stage. However, proposals should demonstrate a clear understanding of how the different measurements will contribute to answering the research question.

C. Feasibility & Timeline

Projects must be designed to make meaningful progress within the six-month equipment access period. The proposed study may be a pilot study, a defined work package or a component of a wider research programme; it does not need to represent the applicant's entire research project.

Applicants should provide a concise month-by-month roadmap covering:

Month 1:

Equipment onboarding, experimental setup, protocol development, and pilot testing

Months 2–3:

Primary data collection

Month 4:

Continued data collection, quality control, and preprocessing

Month 5:

Data analysis and integration of multimodal measurements

Month 6:

Interpretation, manuscript/report preparation, and dissemination

Applicants should also identify potential practical challenges and briefly describe contingency plans for issues such as participant recruitment, equipment availability, field-site access, or technical difficulties.

D. Dissemination Plan

Describe how you intend to communicate the outcomes of the project.

Possible dissemination routes include:

- Peer-reviewed journal publications
- Conference presentations
- Workshops or symposia
- Open-science contributions
- Public or scientific outreach
- Industry applications
- Follow-up research projects
- Social media and professional communication channels

Applicants should indicate the potential scientific, methodological, or applied impact of their work, and identify any outputs that could potentially be shared publicly, subject to relevant permissions.

E. Optional Figures

Applicants may include figures where they help communicate the proposal, such as:

- Experimental setup diagrams
- EEG + physiological sensor configurations
- Study workflow diagrams
- Synchronisation pipelines
- Hypothesis models
- Conceptual frameworks

Figures are encouraged where they make the proposed experimental scenario easier to understand.

5. Evaluation Criteria

Applications will be evaluated jointly by the **Mentalab and PLUX scientific and engineering teams**.

Criterion	Weight	Description
Scientific Merit	45%	Clarity, originality, significance, and methodological rigor of the proposed research
Technical Innovation	25%	Creative and effective use of wearable EEG and PLUX biosignal measurements, including multimodal synchronisation
Feasibility	20%	Realistic implementation within six months using the available equipment
Visibility & Impact	10%	Potential for publication, dissemination, scientific impact, or broader applied relevance

A strong proposal does not necessarily need to use the most technically complex methods. We are looking for projects where the combination of **wearable EEG and biosignal measurements meaningfully advances the research question**.

6. Application Process

Step 1 - Prepare Your Proposal

Prepare a concise two-page PDF proposal using the downloadable application template: **Application_Form_Research_Innovation_Challenge_2026.pdf**

References and essential figures may be included in addition to the two-page limit.

Step 2 - Submit Your Application

Email your proposal to:

contact@mentalab.com

Subject: Mentalab × PLUX Research Innovation Challenge 2026

Applications must be received by:

15 December 2026 at 23:59 Central European Time (CET).

Step 3 - Scientific & Technical Review

Following the submission deadline, proposals will be reviewed by the Mentalab and PLUX teams based on the evaluation criteria outlined in Section 5.

Step 4 - Shortlisting & Online Presentations

Shortlisted applicants may be invited to an online meeting with members of the Mentalab and PLUX teams, in January/February 2027.

The session will provide an opportunity to:

- Present the proposed project
 - Discuss the experimental setup
 - Clarify technical requirements
 - Discuss feasibility and logistics
 - Refine the proposed measurement approach where appropriate
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Step 5 - Winner Announcement

Following the review and shortlist process, one project will be selected as the winner.

Winner notification: January to February 2027

The selected winner will be contacted privately by email and phone in January or February 2027 and asked to confirm acceptance within one week. As part of the acceptance process, the winner will also be asked to review and approve the project title, summary, names and any communication materials intended for public dissemination, and to confirm that the necessary permissions and consents are in place. If the selected team does not respond or is unable to accept within this period, the offer will be extended to the next highest-ranked proposal. Once acceptance and communication approval are confirmed, the winner will be announced publicly through the agreed communication channels.

The winner will then work with Mentalab and PLUX to finalize the equipment configuration and begin onboarding.

7. Timeline & Summary

Milestone	Date
Call Opens	October 2026
Application Deadline	15 December 2026 at 23:59 CET
Application Review	December 2026 to January 2027
Shortlist Interviews	January to February 2027
Winner Notification	January to February 2027
Equipment Delivery and Onboarding	Early 2027, aligned with the selected team's stated project start month
Project Duration	Six months from the agreed project start date

8. Key Expectations

Successful applicants should be prepared to:

- Conduct research using **wearable EEG and PLUX biosignal measurements**
- Collect data in naturalistic or semi-naturalistic environments
- Develop and follow a scientifically rigorous experimental protocol
- Participate actively in technical onboarding
- Maintain regular communication with the Mentalab and PLUX teams
- Provide a final project report and share relevant technical feedback regarding the equipment and experimental workflow
- Provide agreed anonymized research outputs or project results for dissemination
- Share any research outputs, results or data only where separately agreed as part of the challenge
- Obtain all necessary ethical approvals and participant consent before data collection
- Obtain separate consent for any public or promotional use of identifiable participant images, videos, quotes or other personal information, where applicable
- Share anonymized photographs and/or video materials from the study only where appropriate and where the relevant permissions have been obtained

The researcher or institution retains ownership of all research data, results and intellectual property generated through the project. **Mentalab and PLUX will not claim ownership of the project's IP or require transfer of the full research dataset.** Any data sharing or public use of results, quotations, images, videos, case studies or publication timing will be agreed separately and will remain subject to applicable ethical, privacy, institutional and data-protection requirements. Where identifiable individuals are involved, separate consent for public or promotional use must be obtained.

9. Important Usage & Regulatory Notice

The Mentalab Explore Pro and PLUX biosignal measurement systems are research-grade instruments and are not certified medical devices.

The equipment provided through this challenge is intended for **research purposes only** and:

- Is not intended for clinical diagnosis
- Must not be used to make medical decisions
- Is not intended for therapeutic use
- Must not be used for clinical patient monitoring or treatment
- Must not be used as a substitute for certified medical equipment

Applicants proposing research involving patient populations must ensure that the proposed study is conducted strictly within an appropriate **research context**, with all required ethical approvals, institutional permissions, and informed consent procedures in place.

10. Join the Challenge

We are looking for researchers who want to take neuroscience beyond the laboratory and explore what becomes possible when brain activity, physiology, and behaviour can be measured together in the real world.

If your research question requires a more complete picture of human neurophysiology than can be captured in a stationary laboratory, we want to hear from you.

Submit your proposal by 15 December 2026 at 23:59 Central European Time (CET)

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Advancing wearable multimodal neurophysiology, one experiment beyond the lab.