Reviewer 1

R1C0.

STATUS - Encarregado

The manuscript presents a review of portable EEG and fNIRS brain monitoring devices, offering an impressive collection of technical specifications, market availability, and bibliometric adoption. The manuscript would benefit from a more in-depth analytical synthesis, clearer methodological justifications for some metrics, and a stronger link between device characteristics and the requirements dictated by applications in neuroscience and neurorehabilitation. The authors should address these limitations to improve the scientific rigour, interpretability, and translational relevance of the review.

1. Reduzir a quantidade de texto descritivo (listas de dispositivos).
2. Investir mais em acrescentar comparações e interpretações entre dispositivos.
3. Justificar claramente por que cada métrica foi usada.
4. Relacionar características técnicas dos dispositivos em relação:
    - ao uso em pesquisa em neurociência;
    - ao uso em neuroreabilitação clínica.
5. Tornar os resultados mais úteis para tomada de decisão.

→ ***Onde: Introduction, Results, Discussion***

RESPONSE TO REVIEWERS

Text…

R1C1.

STATUS - Felipe e Eduarda

How do the authors justify the use of the “number of DOI-indexed publications” as a proxy for device adoption without normalising device age, year of market entry, or industry-specific publishing practices?

1. Explicar no Methods que essa métrica indica uso na literatura, não qualidade.
2. Substituir termos ambíguos por “inclusion rate” ou “proxy de adoção”.
3. Normalizar a métrica pelo tempo:
    - calcular o número de artigos por ano desde o lançamento do dispositivo.
4. Criar 1 tabela ou figura comparando:
    - número total de artigos;
    - número de artigos por ano.
5. Acrescentar um parágrafo explicando a limitação dessa métrica.

→ ***Onde: Methods, Results, Figures, Tables, Limitations***

RESPONSE TO REVIEWERS

Text…

R1C2.

STATUS - Encarregado

Given the absence of critical evaluation, how should readers interpret differences in signal quality, reliability, or suitability for clinical versus experimental use among devices with similar specifications?

1. Escrever um parágrafo explicando que especificações técnicas semelhantes não garantem desempenho igual.
2. Agrupar os dispositivos em categorias de uso:
    - pesquisa experimental;
    - uso clínico/translacional;
    - uso exploratório/educacional.
3. Criar uma tabela indicando:
    - tipo de uso recomendado por categoria;
    - existência ou não de validação independente.
4. Orientar o leitor sobre como interpretar os dados apresentados.

→ ***Onde: Results, Discussion***

RESPONSE TO REVIEWERS

Text…

R1C3.

STATUS - Encarregado

How do the authors address the potential bias introduced by manufacturer-provided specifications, particularly for parameters such as sampling rate, resolution, and wireless performance?

1. Identificar nas tabelas quais dados vêm de:
    - fabricantes;
    - artigos científicos.
2. Marcar claramente quando o dado é apenas declarado pelo fabricante.
3. Acrescentar no texto que:
    - esses dados não substituem testes independentes;
    - servem apenas para comparação técnica básica.
4. Criar um parágrafo em Limitations sobre esse viés.

→ ***Onde: Methods, Tables, Limitations***

RESPONSE TO REVIEWERS

Text…

R1C4.

RESOLVIDO - claudio

Could the authors clarify how latency, jitter, and throughput, which are discussed conceptually in the context, could be quantitatively integrated into the comparative framework to support real-time or closed-loop applications?

1. Explicar de forma simples: 1. O que é latência; 2. Por que ela é importante para BCI e neurofeedback.
2. Classificar os dispositivos em: 1. Adequados para tempo real; 2. Potencialmente adequados; 3. Não adequados.
3. Criar uma tabela com essa classificação.
4. Relacionar explicitamente com aplicações em loop fechado.

→ ***Onde: Results, Discussion***

RESPONSE TO REVIEWERS

We thank the reviewer for this important comment. As device-specific numerical values for latency, jitter, and wireless throughput are rarely disclosed and are highly configuration-dependent, they could not be directly compared across devices. Instead, these parameters were quantitatively integrated into the comparative framework using protocol- and data-rate–based proxies. Throughput was inferred from channel count and nominal sampling rate, while latency and jitter were contextualized according to the wireless communication protocol.

This proxy-based operationalization was incorporated into Table 1 through the addition of a "Closed-loop readiness (proxy-based)" column, classifying devices as Low, Medium, or High in terms of suitability for real-time and closed-loop applications. This approach enables a systematic comparison of transmission-related performance trade-offs and reflects timing and bandwidth constraints relevant to closed-loop applications, such as real-time neurofeedback, adaptive BCI control, and event-locked multimodal synchronization, without implying regulatory certification or guaranteed real-time performance.

R1C5.

STATUS - Encarregado

In its current form, the review emphasises hardware characteristics. How do the authors plan to integrate computational modelling or signal processing performance metrics to go beyond descriptive comparison?

1. Criar uma subseção chamada "Signal Processing and Computational Considerations"
2. Explicar que o desempenho depende de hardware + software.
3. Citar exemplos da literatura onde os dispositivos foram usados com:
    - machine learning;
    - BCI;
    - neurofeedback.
4. Deixar claro que o artigo discute compatibilidade, não testa algoritmos.

→ ***Onde: Discussion (nova subseção)***

RESPONSE TO REVIEWERS

Text…

R1C6.

STATUS - Encarregado

The manuscript highlights multimodal integration (EEG, fNIRS, IMU, ECG, etc.). How do the authors propose to evaluate the effectiveness of sensor fusion rather than simply the availability of sensors?

1. Diferenciar claramente:
    - ter vários sensores;
    - integrar bem esses sensores.
2. Criar níveis simples de multimodalidade:
    - Nível 1: sensores disponíveis;
    - Nível 2: sincronização descrita;
    - Nível 3: fusão usada em estudos.
3. Atualizar tabelas e texto para refletir esses níveis.

→ ***Onde: Results, Tables***

RESPONSE TO REVIEWERS
Text…

Additional Questions Reviewer 1

R1AQ1.

STATUS - Encarregado

Does the paper contribute to the body of knowledge? The manuscript provides a systematic, market-orientated review of portable and wireless devices for EEG and fNIRS brain monitoring currently available worldwide. The collection of 96 devices and the quantification of their adoption in research through DOI-indexed publications represent an original and valuable resource for neuroscientists, biomedical engineers, and clinicians. The work offers an evidence-based mapping of the commercial landscape of neurotechnologies, thereby filling a recognised gap between engineering specifications and practical research implementation.

1. Deixar explícito no Abstract e na Introduction qual é a contribuição original do artigo.
2. Acrescentar um parágrafo dizendo claramente que o artigo:
    - reúne 96 dispositivos comerciais;
    - conecta especificações técnicas com uso real em pesquisa;
    - preenche a lacuna entre engenharia e aplicação prática.
3. Reforçar que o número de artigos DOI-indexados é usado como indicador de uso na literatura, não de qualidade do dispositivo.
4. Incluir uma frase de síntese na Discussion explicando por que esse mapeamento é útil para pesquisadores e clínicos.

→ ***Onde: Abstract, Introduction, Discussion***

RESPONSE TO REVIEWERS
Text…

R1AQ2.

RESOLVIDO - claudio

Is the paper technically sound? The methodology follows PRISMA-ScR guidelines, is transparently registered in the OSF, and utilises several high-quality databases. Technical descriptions of EEG and fNIRS systems are generally accurate and detailed. However, the review does not critically evaluate signal quality, validation protocols, or performance trade-offs between different devices, which limits the interpretability of technical comparisons. Furthermore, latency, jitter, wireless throughput, and multimodal synchronisation are discussed descriptively but are not operationalised consistently within the comparative framework.

1. Manter a descrição metodológica (PRISMA-ScR e OSF), pois está correta.
2. Acrescentar um parágrafo explicando que o foco do artigo é comparação técnica e de adoção, não validação clínica.
3. Criar uma subseção em Limitations abordando: ausência de testes diretos de qualidade de sinal; dependência de dados fornecidos por fabricantes.
4. Tornar explícito que latência, jitter e sincronização são discutidos como critérios aplicacionais, não como medições experimentais.
5. Ajustar o texto para evitar interpretações de que os autores testaram os dispositivos.

→ ***Onde: Methods, Discussion, Limitations***

RESPONSE TO REVIEWERS

We thank the reviewer for this constructive comment. This scoping review focuses on device-level technical specifications, reported capabilities, and patterns of use across the literature, rather than on experimental validation of signal quality or controlled performance benchmarking. Validation protocols, signal-to-noise ratios, and quantitative performance metrics are highly task-, setup-, and population-dependent and are inconsistently reported across studies, making a cross-device experimental comparison of signal quality beyond the scope of this review.

To ensure interpretability despite these constraints, performance trade-offs were addressed at an architectural and applicational level, considering consistently reported characteristics such as channel count, electrode technology, wireless communication protocol, data access, and software integration.

Regarding latency, jitter, wireless throughput, and multimodal synchronization, these parameters are now explicitly treated as application-level performance criteria rather than experimental measurements. As device-specific numerical values are rarely disclosed by manufacturers and are highly configuration-dependent, they were operationalized within the comparative framework using protocol- and data-rate–based proxies. Throughput requirements were inferred from channel count and nominal sampling rate, while latency and jitter were contextualized according to the wireless communication protocol.

These criteria were integrated into Table 1 through the addition of a “Closed-loop readiness (proxy-based)” column, enabling a systematic and consistent comparison of device suitability for real-time and closed-loop applications, without implying regulatory certification or guaranteed real-time performance.

R1AQ3.

STATUS - Encarregado

Is the subject matter presented in a comprehensive manner? The manuscript presents terms on device coverage, market breadth, and technical descriptors. However, the presentation lacks comparative analyses, decision matrices, or performance-based groupings, which reduces the practical usability of the results section.

1. Reduzir trechos apenas descritivos na seção de Resultados.
2. Criar pelo menos uma tabela ou figura comparativa, por exemplo:
    - dispositivos por tipo de aplicação (pesquisa, clínica, BCI);
    - dispositivos por nível de multimodalidade;
    - dispositivos por adequação a tempo real.
3. Inserir agrupamentos claros (classes ou categorias) no texto.
4. Acrescentar uma interpretação prática após cada tabela:
    - o que o leitor deve concluir a partir dela.
5. Tornar a seção Results mais orientada à tomada de decisão.

→ ***Onde: Results, Tables, Figures***

RESPONSE TO REVIEWERS

Text…

Reviewer 2

R2C0.

STATUS - Encarregado

The manuscript appears to address a research topic in brain–computer interfaces, neurophysiology, and multi-modal biosignal analysis, as evidenced by extensive references to EEG, EMG, fNIRS, cognitive workload datasets, and deep learning-based signal processing. A comprehensive catalog and technical mapping of 96 brain-monitoring devices (125 if variants included), using PRISMA methodology and OSF registration. This topic is highly relevant and aligns well with the scope of the IEEE Access Journal. However, some concerns regarding your manuscript need to be addressed as follows:

1. Manter o escopo geral do artigo (catálogo + mapeamento técnico).
2. Tornar explícito que o foco é mapeamento técnico e adoção, não validação clínica direta.
3. Reforçar no texto que o artigo é um scoping review orientado à tomada de decisão, não um benchmark experimental.

→ ***Onde: Introduction, Discussion***

RESPONSE TO REVIEWERS

Text…

R2C1.

STATUS - Felipe e Eduarda

The Introduction effectively contextualizes EEG/fNIRS relevance, but the research problem is not tightly framed. The text implies lack of standardization and difficulty selecting devices but does not explicitly state the research question nor hypothesis.

1. Inserir no final da Introduction:
    - uma pergunta de pesquisa explícita, por exemplo:
    - “How can commercially available portable EEG/fNIRS devices be systematically compared to support informed selection for neuroscience and neurorehabilitation research?”
2. Acrescentar uma frase explicando por que escolher dispositivos é um problema real.
3. Deixar claro que o artigo não testa hipóteses, mas responde a uma questão de mapeamento e comparação.

→ ***Onde: Introduction***

RESPONSE TO REVIEWERS

Text…

R2C2.

STATUS - Eduardo

It would be advisable to include explicit search syntax for each database, a screening flow diagram with reasons for exclusion, and a statement addressing risk-of-bias and data verification limitations

1. Criar uma subseção em Methods com strings de busca completas para cada base (copiar do protocolo OSF).
2. Incluir um fluxograma PRISMA com números de exclusão por motivo (duplicata, falso positivo, etc.).
3. Acrescentar um parágrafo chamado “Risk of bias and data verification” explicando:

- uso de dados de fabricantes;
- ausência de verificação independente.

→ ***Onde: Methods, Figures***

RESPONSE TO REVIEWERS

Text…

R2C3.

STATUS - Encarregado

The literature review presents a broad range of references, including EEG and cognitive-fatigue datasets and IoT neurotechnology applications. However, the discussion remains largely descriptive rather than analytical. It lacks a comparison matrix or critical synthesis that clearly connects gaps in prior work to the current research. Additionally, key state-of-the-art contributions are missing, such as recent developments in EEG Transformers, neural ODE-based models (2024–2025), biosignal foundation models (e.g., BMCL-23), and advances in federated learning for bio-signal processing.

1. Criar uma subseção nova em Discussion: "Relation to recent advances in biosignal processing"
   - Inserir referências (sem aprofundar demais) sobre:
   - EEG Transformers;
   - modelos fundacionais de biossinais;
   - aprendizado federado em EEG.
   - Explicar claramente:
     - por que esses avanços não foram o foco do artigo;
     - como eles dependem da escolha do hardware.

→ ***Onde: Discussion***

RESPONSE TO REVIEWERS

Text…

R2C4.

RESOLVIDO - claudio

The current contribution is ambiguous. The manuscript does not articulate what is new beyond other published surveys (e.g., wireless EEG surveys, multimodal neurotech reviews).

1. O que exatamente este artigo faz que outros surveys não fazem?
2. Em que dimensão ele é diferente (escopo, método, dados, resultado)?
3. Por que ele não é "apenas mais um survey de EEG wireless / multimodal"?

→ ***Onde: Introduction, Conclusion***

RESPONSE TO REVIEWERS

We thank the reviewer for this important comment. To clarify the novelty of the contribution, we revised the Introduction to explicitly contrast this work with existing wireless EEG and multimodal neurotechnology surveys. While prior reviews typically focus on signal processing methods, experimental paradigms, or limited subsets of devices, the present study provides a large-scale, device-level mapping of commercially available EEG and fNIRS systems. The revised text highlights the unique integration of technical specifications, application-oriented criteria (including proxy-based closed-loop readiness and

synchronization support), and bibliometric indicators of device adoption, thereby clarifying the distinct contribution of this review.

R2C5.

PRODUZINDO - claudio

Improve visual clarity of figures (resolution, captions, axis labels)

1. Revisar todas as figuras:
    - aumentar resolução;
    - melhorar legendas;
    - nomear eixos claramente.
2. Garantir que cada figura possa ser entendida sem ler o texto.

→ ***Onde: Figures***

RESPONSE TO REVIEWERS

Text…

R2C6.

STATUS - Felipe e Eduarda

Add a “Limitations & Future Work” section.

1. Criar seção própria: “Limitations and Future Work”
2. Listar limitações claras:
    - ausência de benchmark;
    - dependência de dados de fabricantes;
    - não avaliação clínica direta.
3. Listar caminhos futuros:
    - benchmarking experimental;
    - integração com IA;
    - estudos clínicos.

→ ***Onde: Final do manuscrito***

RESPONSE TO REVIEWERS

Text…

R2C7.

STATUS - Encarregado

The abstract does not faithfully mirror scope and objectives. It lists general concepts with no quantifiable achievements.

1. Reescrever o Abstract para conter:
    - número de dispositivos;
    - método (PRISMA-ScR);
    - principal resultado (mapeamento + adoção).
2. Evitar termos genéricos.

3. Usar números sempre que possível.

→ ***Onde: Abstract***

RESPONSE TO REVIEWERS

Text…

R2C8.

STATUS - Encarregado

The article lists devices but does not benchmark them technically.

1. Criar benchmark indireto, baseado em:
    - categorias (baixa/média/alta densidade);
    - adequação a tempo real;
    - aplicações típicas.
2. Deixar explícito que:
    - não é benchmarking experimental.

→ ***Onde: Results e Discussion***

RESPONSE TO REVIEWERS

Text…

R2C9.

STATUS - Encarregado

It may be beneficial to include a section titled “Clinical, Industrial, and Societal Deployment Pathways,” where potential deployment scenarios and their constraints are discussed.

1. Criar uma nova seção com esse título: “Clinical, Industrial, and Societal Deployment Pathways”
2. Discutir brevemente:
    - uso clínico;
    - barreiras hospitalares;
    - custo e regulamentação.
3. Relacionar dispositivos a cenários reais.

→ ***Onde: Discussion***

RESPONSE TO REVIEWERS

Text…

Additional Questions

R2AQ1.

STATUS - Encarregado

Does the paper contribute to the body of knowledge? The manuscript contributes a valuable market-mapping dataset of 96 wireless EEG and fNIRS devices (125 including variants), compiled via a PRISMA-ScR protocol and OSF registration. This large-scale technical catalog is useful for researchers making device-selection decisions. However, its scientific advancement is limited, because the paper is

primarily descriptive and does not provide critical synthesis, benchmarking, or analytical interpretation of device performance, clinical applicability, or research validation.

1. Transformar o texto atual em uma resposta afirmativa clara.
2. Reconhecer o caráter descritivo.
3. Explicar por que o mapeamento ainda é uma contribuição científica válida.

RESPONSE TO REVIEWERS

Text…

R2AQ2.

STATUS - Encarregado

Is the paper technically sound? Partially, with methodological gaps that weaken its rigor. There is no benchmarking, device validation, or SNR/latency/impedance comparative analysis, lack of reproducibility information (reviewer count, exclusion rules, search strings), reliance on self-reported manufacturer data without verification.

1. Reconhecer limitações metodológicas explicitamente.
2. Justificar escolhas metodológicas.
3. Evitar qualquer afirmação de validação técnica direta.

RESPONSE TO REVIEWERS

Text…

R2AQ3.

STATUS - Encarregado

Is the subject matter presented in a comprehensive manner? The manuscript thoroughly lists devices, specifications, bibliometric usage, and general technological considerations. However, several major domains expected in a “comprehensive review” are missing or insufficiently developed, such as, no inclusion of 2023–2025 state-of-the-art advances (e.g., EEG-transformers, multimodal AI, federated EEG learning, biosignal foundation models), limited discussion of translational pathways (clinical use, hospital deployment barriers, regulatory context, cost-effectiveness), no roadmap or identification of future research gaps.

1. Inserir referências 2023–2025 estratégicas.
2. Criar um roadmap futuro.
3. Relacionar tecnologia, clínica e sociedade.

RESPONSE TO REVIEWERS

Text…

Reviewer 3

R3C1.

PARCIALMENTE RESOLVIDO - claudio

The abstract states: "2,087 studies explicitly reported the use of brain devices... resulting in a true positive rate of 55.79%." The term "true positive rate" is typically used in classification/diagnostic contexts (sensitivity = TP/(TP+FN)). In a literature search, this terminology is confusing. What constitutes a "false negative" in your search strategy? Are you referring to the precision of your search query (relevant papers / total retrieved papers)? Please clarify this metric. If you mean that 55.79% of the screened papers were relevant (i.e., actually used brain devices), use standard systematic review terminology such as "inclusion rate" or "relevance rate." Provide a PRISMA flow diagram showing the exact numbers at each screening stage.

1. Substituir completamente o termo true positive rate por “inclusion rate” em todo o artigo.
2. Inserir na seção Methods uma definição formal:
    - Inclusion rate = (nº de estudos que realmente usaram o dispositivo) / (nº total de registros recuperados).
3. Deixar claro que:
    - não há “false negatives”;
    - trata-se de eficiência da estratégia de busca, não métrica diagnóstica.
4. Garantir que o fluxograma PRISMA mostre:
    - registros recuperados;
    - excluídos por falso positivo (nome ambíguo, menção sem uso);
    - incluídos finais.

→ ***Onde: Abstract, Methods, Results, PRISMA Figure***

Response To Reviewers

We agree with the reviewer that the term true positive rate is inappropriate in the context of a literature search. The manuscript has been revised to replace this term with inclusion rate, which is consistent with systematic review terminology. The inclusion rate is now explicitly defined in the Methods section as the proportion of retrieved records that explicitly applied the named brain device as an experimental or clinical tool, reflecting the precision of the device-specific search queries, rather than sensitivity or recall. The Abstract and Results sections were updated accordingly to report that 2,087 of 3,741 unique records met the inclusion criteria, yielding an overall inclusion rate of 55.79%. A PRISMA flow diagram has also been added to report the number of records retrieved, duplicates removed, records screened, and studies included at each stage.

R3C2.

STATUS - claudio

The manuscript states that 96 devices were "tracked in the market" but does not describe the market survey methodology. How were the 96 devices identified? Was there a systematic search of manufacturer websites, regulatory databases (e.g., FDA, CE marking), or commercial catalogs? Were devices from China, India, or other non-Western markets included? **Requirement:** Add a dedicated subsection in the Methods describing the device identification protocol. Include: 1. Search terms used (e.g., "wireless EEG," "portable fNIRS"); 2. Databases/sources consulted (e.g., Google Scholar, manufacturer websites, ResearchGate equipment lists); 3. Inclusion/exclusion criteria (e.g., "commercially available as of August 2025," "wireless only"); 4. A supplementary table listing all 96 devices with manufacturer, model number, and year of market entry.

1. Criar uma subseção nova em Methods chamada: “Device identification and market survey protocol”
2. Descrever claramente:

- termos de busca usados (ex.: “wireless EEG”, “portable fNIRS”);
- fontes consultadas:
  - sites de fabricantes;
  - Google Scholar;
  - catálogos comerciais;
  - literatura científica.

3. Especificar critérios de inclusão:
   - dispositivo comercialmente disponível;
   - portátil e/ou wireless;
   - EEG e/ou fNIRS;
   - disponível até mês/ano definido.
4. Especificar critérios de exclusão:
   - protótipos acadêmicos;
   - dispositivos descontinuados;
   - softwares sem hardware.
5. Confirmar explicitamente:
   - inclusão de dispositivos de mercados não ocidentais (China, Índia).
6. Criar uma tabela suplementar com:
   - fabricante;
   - modelo;
   - ano de entrada no mercado.

→ ***Onde: Methods + Supplementary Material***

RESPONSE TO REVIEWERS

Text…

R3C3.

STATUS - claudio

The manuscript reports percentages (e.g., Epoc X = 19.30%, OpenBCI = 4.81%) but lacks deeper statistical analysis. These percentages suggest a highly skewed distribution (a few devices dominate, while most have minimal adoption). This is a classic "long-tail" phenomenon. **Requirement:** 1. Provide a Lorenz curve or Gini coefficient to quantify the inequality in research adoption; 2. Perform a correlation analysis: 2.1. Does device cost negatively correlate with adoption rate? 2.2. Does channel count positively correlate with citation frequency? 2.3. Use regression analysis to identify which technical specifications (e.g., open API, dry electrodes, price) predict research adoption.

1. Gerar uma Curva de Lorenz para adoção dos dispositivos.
2. Calcular o coeficiente de Gini da distribuição de citações.
3. Fazer análises simples:
   - correlação entre preço vs adoção;
   - correlação entre nº de canais vs adoção.
4. Rodar uma regressão exploratória com variáveis como:
   - open API (sim/não);
   - tipo de eletrodo (seco/molhado);
   - preço aproximado.
5. Deixar explícito que a análise é exploratória, não causal.

→ ***Onde: Results + Figures + Methods (estatística)***

RESPONSE TO REVIEWERS

Text…

R3C4.

PARCIALMENTE RESOLVIDO - claudio

The abstract mentions "a significant gap between consumer-grade and research-grade technologies" but does not define these categories. Is the classification based on price, signal quality (SNR), regulatory approval (FDA Class II), or intended use? **Requirement:** 1. Provide explicit criteria for this classification. For example: 1.1. Consumer-grade: < $500, < 8 channels, dry electrodes, primarily marketed for meditation/gaming; 1.2. Research-grade: > $5,000, > 32 channels, wet/gel electrodes, medical-grade certification.

1. Criar critérios explícitos em Methods ou Results:
2. Aplicar essa classificação de forma consistente.
3. Ajustar o Abstract para refletir essa definição.
4. Inserir na tabela a classificação “Grade: consumer / research / clinical”

→ ***Onde: Methods, Results, Abstract***

RESPONSE TO REVIEWERS

We have added an explicit definitional paragraph clarifying that the classification of EEG devices is based on intended use, technical specifications, signal quality, and regulatory status. This paragraph was placed before the detailed technical comparison to improve conceptual clarity and directly address the reviewer’s concern. This classification framework is supported by prior studies distinguishing consumer-grade, research-grade, and clinical-grade EEG systems based on these criteria (Chuang and Lin, 2019; Doudou et al., 2020; Huang et al., 2020; Grasso-Cladera et al., 2023).

R3C5.

STATUS - Encarregado

The manuscript mentions devices "currently available" but does not analyze temporal evolution. The neurotechnology market has evolved rapidly. Early devices (e.g., NeuroSky MindWave, 2009) differ significantly from recent models (e.g., Kernel Flow, 2023). **Requirement:** 1. Add a timeline figure showing when each device entered the market; 2. Analyze trends: 2.1. Has the average channel count increased over time? 2.2. Has the price per channel decreased (Moore's Law for neurotechnology)? 2.3. When did wireless architectures become dominant?

1. Criar uma linha do tempo mostrando ano de entrada de cada dispositivo no mercado.
2. Analisar tendências simples:
    - aumento do nº médio de canais ao longo do tempo;
    - redução do custo por canal;
    - transição para arquiteturas wireless.
3. Relacionar essas tendências à evolução tecnológica geral.

→ ***Onde: Results, Figures, Discussion***

RESPONSE TO REVIEWERS

Text…

R3C6.

STATUS - Encarregado

The manuscript states "125 models and variants" but does not explain how variants were handled in the analysis. If a study used "Epoc" (2009) and another used "Epoc X" (2018), were these counted separately or aggregated? The Epoc X has significant hardware improvements (5-electrode reference system, improved wireless). Clarify the aggregation strategy. If variants were pooled, justify this decision. If kept separate, provide a breakdown showing which specific variant was most cited.

1. Explicar claramente a estratégia adotada:
    - variantes agrupadas por família ou
    - variantes tratadas separadamente.
2. Justificar a decisão:
    - semelhança técnica;
    - continuidade comercial.
3. Se variantes foram separadas, apresentar qual versão foi mais citada.
4. Incluir essa explicação em Methods.

→ ***Onde: Methods, Supplementary Table***

RESPONSE TO REVIEWERS

Text…

FINAL STATEMENT

We believe that the revised manuscript has substantially improved in clarity, analytical depth, methodological transparency, and translational relevance. We sincerely thank the reviewers and the Associate Editor for their valuable feedback and hope that the revised version meets the standards of IEEE Access.