Datasea Announces Major Acoustic Technology Advancements in Brain–Computer Interface Applications

Acoustic-Driven Technologies Poised to Support Embodied Intelligence and Health Robotics Applications in a Multi-Billion-Dollar Brain–Computer Interface Market

BEIJING, China, January 12, 2026 /PRNewswire/ – Datasea Inc. (NASDAQ: DTSS) ("Datasea" or the "Company"), a technology company specializing in acoustic high-tech innovation and AI-powered multimodal systems, today announced that its China-based operating entities and subsidiaries have recently made progress in two acoustic-driven technology initiatives related to brain–computer interfaces ("BCI") and rehabilitation robot control, leveraging proprietary acoustic-driven technologies.

The Company stated that these advancements represent an important extension of its acoustic-driven BCI core technology framework previously disclosed in late 2025. The new developments further advance acoustic-enabled BCI technologies from foundational neural signal processing toward engineering-level system integration and practical applications in embodied intelligence scenarios, including medical rehabilitation and health robotics.

Two Acoustic Technology Advancements: Progress Toward System-Level BCI Applications

The two newly developed acoustic technology initiatives focus on two application directions within brain–computer interface research: assistive communication and rehabilitation robot control. These initiatives form part of the Company's ongoing efforts to explore how acoustic-driven approaches may support the translation of neural signals into system-level control mechanisms under practical application scenarios.

BCI-Based Communication and Care Assistance System

One initiative is oriented toward assistive communication and care scenarios for patients with neurological conditions, such as stroke survivors. The technology is being developed to explore a brain–computer interface–based intention recognition and system control framework, with the objective of interpreting neural signals and mapping user intent into control instructions for external devices or systems.

The Company believes this approach may help address certain practical challenges commonly observed in applied BCI research, including variability in neural signal quality, limitations in coordinating neural outputs with device-level control systems, and the need for more stable interaction mechanisms in assisted communication and caregiving environments. Through a system-oriented design approach, this initiative

is intended to support further exploration of intent-driven human–machine interaction models applicable to assistive care contexts.

BCI-Based Upper-Limb Rehabilitation Robot Control System

The second initiative focuses on rehabilitation robotics and explores a system-level method for translating neural signals acquired through brain–computer interfaces into structured control logic suitable for upper-limb rehabilitation training robots. This effort is aimed at examining how neural signal interpretation may be more effectively aligned with robotic execution processes in rehabilitation settings.

By integrating neural signal decoding, control logic generation, and robotic execution within a unified system framework, the Company is seeking to establish a technical reference model for the future development of intent-driven rehabilitation training systems and human–machine collaboration approaches, while continuing to evaluate adaptability across different users and rehabilitation scenarios.

Synergy with Datasea's Acoustic-Driven Brain–Computer Interface Technology Framework

Integration Within Datasea's Acoustic-Driven BCI Technology Framework

Datasea's R&D team noted that the Company's previously disclosed technologies related to acoustic coupling and neuromodulation primarily addressed noise interference, signal attenuation, and stability issues during BCI signal acquisition and transmission. By leveraging acoustic and ultrasonic techniques, those technologies enhanced the quality and usability of raw electroencephalogram (EEG) signals, providing more reliable inputs for downstream processing.

Building on this foundation, the newly announced advancements further deepen and integrate the core BCI technology chain across multiple layers:

- **Signal Enhancement:** An acoustic-driven signal enhancement approach based on NeRF acoustic field modeling and nested generative networks supplements missing or incomplete EEG data through acoustic coupling mechanisms, while introducing physical–physiological consistency constraints to improve signal integrity and stability.
- **Intent Interpretation：** Genetic algorithms are used for EEG feature selection, combined with Fourier and Hilbert–Huang transforms to extract multidimensional time–frequency features, enabling the construction of personalized user models that address inter-individual neural signal variability.
- **Hardware Adaptation:** The Company is exploring flexible MXene electrode membranes incorporating crosslinked β-cyclodextrin to balance biocompatibility and anti-swelling properties, enabling relatively stable

inductive characteristics in fluid environments and supporting non-invasive BCI signal acquisition.
- **Closed-Loop System：** Transcranial closed-loop ultrasound modulation is integrated into signal processing and interaction workflows to form a closed-loop structure encompassing ultrasound stimulation, neural signal acquisition, real-time feedback, and device execution.

Datasea believes that the coordinated evolution of algorithms, models, materials, and system architecture forms a complete technical loop—from acoustic-driven signal enhancement to personalized intent decoding, structured system control, and physical execution feedback—laying an industrial-grade foundation for the engineering deployment of BCI technologies in embodied intelligence systems, particularly health robots and rehabilitation devices.

Based on this framework, the Company has initiated collaborations with domestic health robotics companies, including Nanjing Linghang, to integrate acoustic-driven BCI technologies into health robot system architectures for system-level validation and application exploration, advancing the transition from R&D to practical deployment and commercialization.

Market Background

According to industry reports released in 2024 by **Grand View Research** and **Fortune Business Insights**, the global brain–computer interface market is experiencing sustained development:

- Global BCI market size is projected to reach approximately **USD 15–20 billion by 2030**;
- Non-invasive BCI technologies are expected to be among the fastest-growing segments due to safety, accessibility, and broader application potential;
- Medical rehabilitation, consumer electronics, and intelligent wearable devices are anticipated to be key demand drivers over the next decade.

The Company believes that continued growth in rehabilitation medicine and eldercare demand, together with a maturing technology and application ecosystem, will provide a favorable environment for long-term R&D, engineering validation, and application expansion of BCI-related technologies.

CEO Commentary

Ms. **Zhixin Liu**, Chief Executive Officer of Datasea, stated:

"These two BCI-related acoustic technology advancements represent another important milestone in the continued evolution of our acoustic-driven technology platform. Building on our prior progress in addressing neural signal transmission stability, the new developments in personalized decoding, flexible hardware, and closed-loop modulation further enable the interpretation and understanding of neural signals and their transformation into executable, structured control commands. This allows our technologies to be practically deployed in embodied intelligence systems, including health robotics.

These advancements not only reinforce our core technology barriers, but also further clarify our long-term strategy centered on 'acoustic technology plus multi-scenario applications.' Our expanding patent portfolio in acoustics and brain–computer interfaces strengthens our positioning in acoustic intelligence, BCI, and embodied intelligence convergence, and supports multi-layer collaboration with intelligent hardware companies, including health robotics manufacturers.

We are advancing brain–computer interface technologies from the laboratory into real-world applications, with the goal of delivering tangible benefits to neurological rehabilitation patients and health management users. We are confident in our ability to gradually build competitive advantages in these specialized markets and to create sustainable long-term value for our shareholders."

About Datasea Inc.

Datasea Inc. ("Datasea") is a leading provider of products, services, and solutions for enterprise and retail customers in two innovative industries, acoustic high tech and 5G-AI multimodal digitalization. The Company's advanced R&D technology serves as the core infrastructure and backbone for its products. Its 5G multimodal digital segment operates on a cloud platform based on AI. Datasea leverages cutting-edge technologies, precision manufacturing, and ultrasonic, infrasound and directional sound technology in its acoustics business to combat viruses and prevent human infections, and it is also developing applications in medical ultrasonic cosmetology. In July 2023, Datasea established a wholly-owned subsidiary, Datasea Acoustics LLC, in Delaware, in a strategic move to enter the U.S. markets and to mark its global expansion plan. For additional information, please visit www.dataseainc.com.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934 and as defined in the U.S. Private Securities Litigation Reform Act of 1995. These forward-looking statements can be identified by terminology such as "will", "expects", "anticipates", "future", "intends", "plans", "believes", "estimates", "target", "going forward", "outlook," “objective” and similar terms. Such statements are based upon management's current expectations and current market and operating conditions, and relate to events that involve known or unknown risks, uncertainties and other factors, all of which are difficult to predict and which are beyond Datasea's control, which may cause Datasea's actual results, performance or achievements (including the RMB/USD value of its anticipated benefit to Datasea as described herein) to differ materially and in an adverse manner from anticipated results contained or implied in the forward-looking statements. Further information regarding these and other risks, uncertainties or factors is included in Datasea's filings with the SEC, which are available at www.sec.gov. Datasea does not undertake any obligation to update any forward-looking statement as a result of new information, future events or otherwise, except as required under law.

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