

*By obtaining the CE mark for medical devices for Somno-Art, an outpatient medical solution for sleep analysis, PPRS is taking a key step toward personalized management of sleep disorders and the treatment of brain diseases.*

– Colmar, March 2021

**Somno-Art: An easy-to-use sleep exploration tool developed according to the highest scientific, medical and regulatory standards**

Consisting of an electronic armband, collecting real-life physiological data, and an automatic analysis software, based on proprietary artificial intelligence algorithms, Somno-Art combines the accuracy of the gold-standard, the polysomnography (PSG), and the simplicity of use of a connected object.



**Sleep: A health issue**

Between 10% and 20% of the population experience sleep disorders that may be the direct consequence of brain diseases (such as insomnia, sleep apnea, narcolepsy, anxiety, depression, etc.), or related to other non-brain diseases (cardiovascular or metabolic disorders such as diabetes, etc.) but also due to behavioral, professional and environmental factors (stress, shift work, screen exposure, ambient temperature, etc.). These disorders are complex to diagnose and are recognized as major health problems.

**Somno-Art: An alternative to the sleep laboratory and PSG**

The PSG, providing complete medical information on sleep architecture, remains restricted to a limited number of indications (sleep apnea, narcolepsy) and patients, because it is cumbersome to implement and costly to the healthcare system. For other conditions, physicians generally base their diagnosis on more limited tools (sleep questionnaire) and subjective assessments (patient's interviews).

At the same time, a growing segment of the population feels the need to monitor the quality of their sleep using consumer devices. However, these devices provide only incomplete or insufficiently robust information for healthcare professionals to use.

By providing, from an outpatient recording and automatically, all the sleep parameters and the night hypnogram, Somno-Art allows researchers to expand the use of the sleep biomarker, clinicians to facilitate diagnosis and monitoring of their patients, and hospitals to gradually release beds reserved for PSG.

## About Somno-Art

The technological challenge was overcome thanks to the unique expertise of its inventor Alain Muzet, former French research director at the world-renowned *Centre National de la Recherche Scientifique* (CNRS), and the use of advanced techniques in artificial intelligence (machine learning), in signal processing and in optical, electronic and textile engineering.

Since 2011, the project has been supported by the PPRS Group, which has been surrounded by academic and hospital partners: Prof. Régis Logier (*Centre Hospitalier Régional et Universitaire* (CHRU) CIC-IT of Lille), Prof. Régis Lengellé (University of Technology of Troyes), Prof. Patrice Bourgin (CHRU of Strasbourg), Dr. Thomas Roth (Detroit Henry Ford Hospital); and corporate partners within the "Cluster Nord Excellence" (Bluegriot, Unistudio, RD2, Useconcept, Toptexcube, ASM and Prestocab).

The device provides a pulse recording for the sleeper, measured by plethysmography, with a quality superior to consumer devices through proprietary signal processing algorithms and ergonomics combining an electronic housing and textile armband.

The technology, on which automatic physiological data processing software is based, is patented in the European Union, the United States, China, Japan, Israel, South Korea and Russia.

Baptiste Planat, Somno-Art Project Manager at PPRS, stated: *"this certification brings to fruition 10 years of development, demonstrating the relevance of the collaborative development model. We are now working on the Somno-Art certification by the FDA in the United States and its commercialization in various market segments: academic and pharmaceutical researches, medical, sports and performance."*

## About the PPRS Group

Based in France (Colmar), Austria (Vienna) and the United States (Boston), the PPRS Group specializes in the development of innovative projects in the field of neuroscience.

As a strategic partner, PPRS, with a team of 50 staff members, supports nearly a dozen drug-candidates or medical devices from early stages to registration and marketing.

With the ISO 13485 certification obtained in March 2020 and the medical device CE marking for Somno-Art obtained in November 2020, PPRS is completing its Deeptech strategy, which was initiated in 2019 with the acquisition of the Austrian company The Siesta Group, which specializes in brain and circadian activity analyses (electroencephalography, polysomnography, actimetry, etc.) for clinical research.

By complementing its transdisciplinary expertise in the central nervous system with the establishment of medical databases under real-life conditions, the PPRS Group is contributing to the emergence of a new paradigm based on the deployment of integrated pharmacodynamic solutions, enabling earlier diagnosis and more effective treatment of psychiatric, neurological and neurodegenerative diseases.

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