

LICENSING OPPORTUNITY

An ambulatory system for human motion monitoring Physilog

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Motion analysis, physical activity, rehabilitation, portable device, ambulatory monitoring.

Patent status

PCT application filed

Contact researcher / inventor

Dr Kamiar Aminian
Lab. de mesure et d'analyse de mouvement
Kamiar.aminian@epfl.ch
Tel : + 41 21 693 2617

Contact Technology Transfer Office

Dr André Catana
andre.catana@epfl.com
Tel : +41 21 693 35 81
Fax : +41 21 693 70 40

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Physilog is a new ambulatory system for gait analysis allowing a better assessment of surgery outcome after hip and knee arthroplasty. Physilog is based on miniature kinematic sensors attached on body segment and a portable recorder placed on the waist belt. The device is lightweight (300g) and compact, records up to 8 channels, stores up to 16MB of data on removable memory card and operates up to 16 hours on rechargeable battery. Data is analysed using an artificial neural network and a time-frequency processing. The movement coordination, temporal and spatial gait parameters are extracted from the signals retrieved during natural walking. Gait analysis are performed before the operation and every three months afterward. These analysis quantify scientifically the post-operative evolution: a significant decrease of stance and double stance asymmetry is noted while the coordination is increased.

Innovative aspects

- Reliable walking signature
- Advanced analysis of the kinematic signals involving neural network training algorithm
- Gait disability monitoring tool.

Main advantages

- Can be used outside of the laboratory
- Provides a complete set of gait features
- Lightweight compact portable device.

Potential Commercial Applications

- Sport (jogger walking and running speed)
- Physical activity monitoring (elderly monitoring, in home monitoring)
- Parkinson monitoring.