

## SMART GAIT

Radar system for early screening of frailty and fall prevention for elderly persons.

### PRESENTATION

Current fall detection solutions for the elderly persons (necklaces, watches) have a rate of false alarms that is too high. The radar system developed by the ETIS laboratory allows for continuous and non-intrusive monitoring, with detection of gait deterioration and prevention of fall risks.



Image of a radar emitting waves in the living room of an elderly person who feels safe. The skeleton of the elderly person is visible.

### APPLICATIONS

- Home care
- Retirement home
- Nursing home

### DEVELOPMENT PHASE

TRL 4

### LABORATORIES

CY Cergy Paris Université

### CONTACT

☎ +33 (0)1 44 23 21 50

✉ industriels@erganeo.com  
Ref. project : 560

Microdoppler radar - Gait analysis - AI algorithms

### COMPETITIVE ADVANTAGES

- Reliable
- Non-intrusive
- Continuous

### PUBLICATIONS

- [J-7] Z. Li, J. Le Kernec, O. Romain, F. Fioranelli and S. Wang, «Radar-based Human Activity Recognition with Adaptive Thresholding towards Resource Constrained Platforms» in Scientific Report, Nature, Sci Rep 13, 3473 (2023).
- [J-8] S. Wang, J. Le Kernec, O. Romain, F. Fioranelli, et al, «The Human Activity Radar Challenge: benchmarking based on the 'Radar signatures of human activities' dataset from Glasgow University,» in IEEE Journal of Biomedical and Health Informatics, doi: 10.1109/JBHI.2023.3240895, Jan 2023.

### INTELLECTUAL PROPERTY

- Brevet N° EP21306742.4 (2021) : "Method and device for human activity classification using radar micro doppler and phase".
- Brevet N° EP19306308.8 (2019) "Device for characterizing the actimetry of a subject in real time".