

RadioSense – CHIST-ERA EU (2019-2021)

Big Data for the next-gen Smart Industry (BDSI)

Partners

- Aalto University (AAL), Finland
- Consiglio Nazionale delle Ricerche (CNR), Italy
- Telecom SudParis (TSP), France

The RadioSense project kick starts the development of innovative sensing tools as key enablers in advanced manufacturing. In industrial environments, human workers interact with increasingly autonomous machinery. To ensure workspace safety and production efficiency during human-robot cooperation (HRC), continuous and accurate tracking and perception of workers' activities is the key.

The RadioSense project explores passive radio sensing, or “Radio Vision” technologies which aim to track, recognize and analyse human-robot interactions continuously without requiring workers to wear any devices, and without the need for privacy-intrusive video, while ensuring workers' safety and privacy in industrial environments.

RadioSense technology leverages real-time collection and processing of ambient (or stray) radio signal streams (e.g., those found in 4G/5G and WiFi connections) and PHY/MAC Channel State Information (CSI) that form a specific type of “big data”.

Main topics of interest:

- Deep learning models for embedded devices
- Transformative computing
- Distributed Signal Processing
- Autonomous robots
- EM body models in the mmWave bands (60-100GHz)
- WiFi radar with smart antennas

Positions available and contacts

- Funding: <http://www.chistera.eu/> (CHIST-ERA EU project)
- Position Available: 24-month postdoctoral fellowship
- Starting date: Early 2019
- Locations: CNR-IEIIT, Milan, Italy (<http://www.ieiit.cnr.it/>), WaveLab (<http://www.wavelab.polimi.it>)
- Contact: Stefano Savazzi (<http://home.deib.polimi.it/savazzi/>): stefano.savazzi@ieiit.cnr.it