Fraunhofer

IIS

SMART SENSORS D

AMBIENT ASSISTED LIVING

WWW.IIS.FRAUNHOFER.DE

WHAT WE OFFER

– Adaptation of our tracking technology for applications in
  ambient assisted living
– Integration with new technologies such as Bluetooth Low
  Energy for cost-effective solutions
– Combination with various tracking technologies, telemetry
  and RFID
– Advice on introducing tracking technologies in health care and
  maintenance

R&D COOPERATION WITH FRAUNHOFER IIS

– Its in-depth expertise in tracking, positioning and navigation
  makes Fraunhofer IIS a reliable partner for R&D projects at
  both national and international levels.
– Our new and unique L.I.N.K test facility makes it possible to
  recreate application-specific circumstances, in particular condi-
  tions found in large environments, for test and demonstration
  purposes.

*Fraunhofer Institute for
Integrated Circuits IIS*

Director
Prof. Dr.-Ing. Albert Heuberger

Am Wolfsmantel 33
91058 Erlangen
Germany

For inquiries please contact:
Ferdinand Kemeth
Phone +49 911 58061-3242
Fax +49 911 58061-3299
ferdinand.kemeth@iis.fraunhofer.de

www.iis.fraunhofer.de

AT A GLANCE

The goal of the Smart Sensors D project is to improve the safety of people in a wide variety of situations by offering location-independent, pervasive remote support.

This requires seamless indoor and outdoor tracking functionality. The project is a response to calls for research into ubiquitous tracking support for a diverse range of people. The idea is to make it easier to locate people such as athletes, children and chronically ill patients in an emergency so that help can be provided faster.

This special tracking technology will enable elderly or disabled people to remain in their homes longer. At the same time, it will provide maximum safety by initiating an appropriate intervention in an emergency, for instance by alerting relatives or caregivers as soon as a patient leaves a previously defined area.

TECHNICAL DETAILS

The project employs GSM/UMTS, GPS, WLAN and Bluetooth to achieve pervasive tracking, each technology being used in a specific type of environment.
In their immediate home environment, the person in need of protection will be tracked using Bluetooth signals. This will be achieved through a combination of Wi-Fi fingerprinting and angle-of-arrival estimation.
Existing Wi-Fi infrastructure will be relied on in larger indoor and urban outdoor spaces, with signal strength fingerprinting used to precisely determine positions.
In other outdoor areas, exact positions will be determined with the aid of global navigation satellite systems such as GPS.

APPLICATION AREAS

The resulting system will help locate people quickly in an emergency, regardless of whether they are in a building or in the open. Integrating several technologies, it will enable seamless indoor and outdoor tracking. Smart Sensors D will be scalable and hence adaptable for a range of uses.

CUSTOMER BENEFITS

– Maintaining independent living at home
– Greater ease in locating people in an emergency
– Discreet and reliable
– Sense of safety for seniors and loved ones
– Easy use
– No sense of being watched, unlike camera-based systems
– Unobtrusive tracking

TECHNICAL BENEFITS

– Real-time signal processing
– User-friendly tracking technology
– Easy-to-install tracking infrastructure
– Miniature sensor for discreet use
– High power efficiency, low maintenance
– Cost efficiency thanks to specially selected wireless communication standards
– Custom adaptations
– Scalable system