Guiding system for visually impaired for running on a track

Results in Brief

Advanced guiding technology for visually impaired athletes to run alone

Blind and visually impaired people cannot engage in systematic running and training activities independently. An EU initiative designed cutting-edge technology to enable blind and partially sighted athletes to run without any assistance.

Most fitness centres, sports facilities and track stadiums are not designed to accommodate the visually impaired. This results in their exclusion from an active lifestyle and regular physical activity such as running and jogging.

To raise the level of accessibility of the visually impaired to sports, the EU-funded BLINDTRACK (Guiding system for visually impaired for running on a track) project developed novel assistive technology with continuous real-time tracking and guidance for runners that allows them to train and run without needing a guide.

The secured and user-friendly guiding system enables the visually impaired to run continuously and without assistance on a 400 m athletic track. It is able to simultaneously navigate and guide 10 blind and 20 sighted people on such fields while avoiding collisions.
Project partners developed several system components. A localisation system provides highly accurate information in real time on the position of runners. A tactile belt worn by runners helps them to navigate while running. It transmits essential information to users through vibrations. A central control unit operates the entire guiding system and links position information and the navigation process. To achieve this, a special prediction algorithm calculates the trajectory of each runner.

The entire system was successfully tested on the field and further optimised. Lastly, six visually impaired volunteers trialled the prototype. They were satisfied with overall performance and expressed a desire to use the device during training activities.

Thanks to BLINDTRACK, the blind and visually impaired will be empowered to live a more active and healthier life.

**Keywords**

Visually impaired, running, sports, BLINDTRACK, guiding system

---

**Project Information**

**BLINDTRACK**

Grant agreement ID: 605821

Funded under

Specific Programme "Capacities": Research for the benefit of SMEs

**Total cost**

€ 1 753 380.59

**EU contribution**

€ 1 338 000,00

Coordinated by

ATEKNEA SOLUTIONS

HUNGARY KFT

Hungary

---

**Discover other articles in the same domain of application**