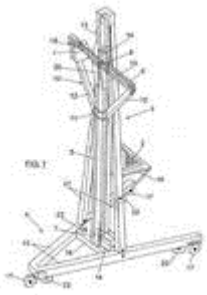
Patent: Real Time Kinematic Analysis System for Training and Sports Competitions



Inventors: Pablo Floria Martín and Amelia Ferro Sánchez

Holders: Universidad Pablo de Olavide and Universidad Politécnica de Madrid

Description

This is a system for **recording and evaluating** in real time **athletes' kinematic data in training or competition conditions** and, especially, for **the recording, evaluation and analysis of distances covered, speeds and accelerations for those sports involving movements in a straight line,** as well as **the biomechanics interpretation** of data recorded.

Need or problem it solves

- The interpretation by trainers and athletes of biomechanics parameters make the invention a tool **to improve performance, planning, design and evaluation of training processes and the search for the best strategy in competition**, just as it **aids** both the **trainer** and the **athletes** in **decision-taking, problem-solving and error-correction.**
- The invention can be used for all those sports or specialities in which movement is a fundamental part of technique and performance. Similarly, it can be applied to all events or movements requiring prior movement, racing into position, acceleration runs, run-ups, run-ups for long jump, triple jump, pole vault, throwing the javelin etc. or where the movement is decisive for success, as in the run-ups for gymnastic vaults and acrobatic leaps as well as for those sports for which analysis of reaction time to a stimulus is essential, such as badminton, tennis, squash, volleyball spikes, martial arts etc.

Innovative features/competitive advantages

- The invention is **portable, light, and easy to set up and operate**, for which reason it can be used on any playing field, track, court or sports facility, offering **great versatility in use**; moreover it can be transported from place to place with ease and with the speed required by competition or training.
- The bottom of the system support is wheeled **to facilitate moving the system with ease to wherever needed.**
- The capability of the system's laser to move, following one particular surface of the athlete's body, ensures **more precise and reliable data are obtained** than could be possible with fixed laser systems, ensuring that the laser beam does not lose contact with the athlete.
- The analysis system **does not interfere with the athlete's actions** since it is not necessary to put any instrument on the athlete to provide real time distance and speed data.
- The immediacy of the results avoids the need to follow digitising procedures used in traditional photogrammetry, which take enormous amounts of time. In this way the **results obtained are of immediate use to trainers and athletes.**

Types of businesses interested

Private and public entities in the sports sector