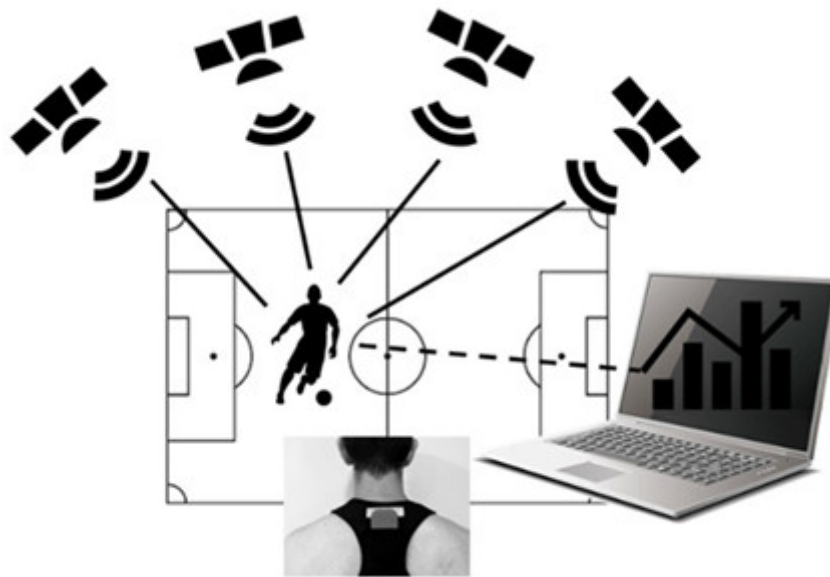


# THE IMPACT OF GLOBAL POSITIONING SYSTEMS (GPS) IN SPORT



The Digi-Sporting project is a Strategic Partnership, designed to support sports organizations that want to take further steps towards digital transformation, providing them with a new specialized and transversal professional profile that currently does not exist at European level, as well as giving them a series of resources and tools that allow them to implement a change in the management model through the use of new technologies.

The Global Positioning System (GPS) is a tool that provides sports clubs with a higher quality of measurement and evaluation of their athletes. The impact of this technology on athletes and clubs is so high that practically 100% of professional football or basketball clubs have these devices for their players.

These devices provide location and time data through satellite tracking. At least four satellites in orbit around the earth are needed to determine the GPS position trigonometrically and GPS devices receive information that determines signal traffic. Together with the addition of triaxial accelerometers, magnetometers and gyroscopes, the data is more accurate. In turn, it is a technique to collect the kinematic profile of athletes in a simple, non-invasive way.

The GPS devices are placed on the back of a specifically designed bib overalls to prevent the range of movement of the players' upper limbs from being limited. In this way, the

GPS device remains on the back of the players' backs

Variables measured by the GPS devices:

Physical performance: A range of 6 speeds is established based on literature: standing, walking, smooth running, fast running, high speed running and sprinting.

Movement patterns: Total distance covered, maximum and average speed, absolute distance and relative distance of each zone, number of accelerations and decelerations and acceleration peaks.

Player load: Internal load, which is the combination of the accelerations detected in the three planes of body movements.

All this set of variables offers a large amount of data on each player, this set of data allows coaches, physical trainers or physiotherapists to know the state of the athlete and to be able to carry out more precise actions to improve the performance of the players. For all these reasons, more and more sports and clubs are opting for this tool to evaluate and monitor their athletes.

**Link to Original article:** <https://www.digi-sporting.eu/news/the-impact-of-global-positioning-systems-gps-in-sport?elem=286837>