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## Austrian sports scientists develop custom fitness apps, confirming their top international research credentials

*When it comes to developing apps to monitor and fine-tune patterns of movement, and using real-time, custom performance diagnostics to analyse sports, Vienna's Institute of Sports Science leads the international field. The latest research findings and pioneering international technologies will be presented at the ECSS Congress at the Austria Center Vienna from 6-9 July.*

- Viennese scientists develop customisable fitness apps that take the individual's physical profile into account
- Austria leads the way: technology to analyse movement in competitive and recreational sports
- Football analysis tool tracks behaviour and patterns of movement

Austrians love fitness apps – one in three people aged 15-59 use smartphone apps as part of their personal fitness regimes. The majority of these apps provide only **superficial information** without paying attention to posture issues, injury history or individual physical condition – an approach which can place undue **stress on the musculoskeletal system** or **result in injury**. In response, Prof. Arnold Baca from the [University of Vienna's Centre for Sports Science](#) and President of the Congress of the European College of Sport Science (ECSS), has been leading a working group to develop **individual performance analysis** and **monitoring systems** in various national and European projects. The technology allows users to build up **professional training programmes**, which can be supported and continued at home with the help of an app.

“The aim is to generate a **fitness app** that, in addition to recording **training metrics** and **intensity**, flags up issues with execution and technique. The idea is also to introduce it in other areas, such as physiotherapy. Following a face-to-face session with a qualified physio, this individualised, intelligent app accompanies the patient as they embark upon a home coaching programme. Ultimately, the goal is to improve long-term therapeutic outcomes,” Prof. Baca explained.

### Tactical analysis for team sports

**Computer vision** systems which rely on **sensors** are behind this and many of the other **information-based developments** coming out of the world of sport: movements are captured by **multiple cameras** or sensors applied to the athlete's body to reconstruct **motion patterns**. The **possibilities** opened up by the technology extend to various areas, including **sports match analysis**.

A current **research project** involving the working group led by Prof. Baca is one of the developments up for presentation at the ECSS Congress. A group of sports scientists have teamed up with [Inmotiotec](#) and IT specialists from the [Software Competence Center Hagenberg](#) to develop **automatic tactical analysis tools for football** matches in the

Austrian Research Promotion Agency-funded WiMoiS (knowledge-based modelling of individual game performance) project. Video and sensor data is not only used to automatically capture match activity such as passes, shots and tackles – the software also supports time-motion analysis and semantic analysis of collective patterns of movement. “Particularly in competitive sport, these developments open the door to completely new **pre-match preparation, in-game coaching and post-match analysis,**” Prof Baca noted. These tools could be called upon as early as the next **European Championships in 2020**, and it is likely that forward-looking clubs and associations will already start exploiting their potential even earlier than that.

### **About the ECSS Congress**

The ECSS Congress is the world’s largest multidisciplinary sports science congress. It will take place in Vienna for the first time from 6-9 July under the banner of ‘Crossing Borders Through Sport Science’. During the event almost 2,700 sports scientists will converge on the Austria Center Vienna to network and discuss the latest developments in their disciplines. Organised by the European College of Sport Science for the 21st time this year, the 2016 event will play out under the patronage of Congress President Prof. Arnold Baca.

### **About the Austria Center Vienna**

The Austria Center Vienna is operated by Internationales Amtssitz- und Konferenzzentrum Wien, Aktiengesellschaft (IAKW-AG), which is also responsible for maintaining the Vienna International Centre (VIC). The Austria Center Vienna is Austria’s largest conference centre, with 24 halls, 180 meeting rooms, and some 42,000 square metres of event space (including 22,000 square metres of exhibition space), and is one of the top players on the international conference circuit. IAKW-AG and the Austria Center Vienna are headed by Chief Executive Officer Susanne Baumann-Söllner. [www.acv.at](http://www.acv.at).

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