

Current News

CeBIT: HPI Software Revolutionizes the Analysis of Game Patterns in Soccer

CeBIT 2015

Potsdam/Hanover. "Heel, toe, one, two, three" - that was yesterday. Today soccer coaches are working to hone in on team tactics. But observing every competing team live on location or via video costs a great deal of time and money. Potsdam researchers at Hasso Plattner Institute (HPI) have therefore revolutionized modern game analysis with their "interactive tactic board." Researchers will be presenting this innovation at the CeBIT in Hannover (Hall 9, D44). Strengths and weaknesses in the defensive or offensive behavior of teams or individual players can be determined intuitively, efficiently and fast with the tactic board.

In the German Bundesliga, for example, today all games are closely scrutinized via TV camera and other video-supported systems. Approximately 1.5 million player positions are captured per game. This information is available as data and videos after the final whistle is blown. Analyzing these huge amounts of data by hand and making it graphically visible is virtually impossible. This is where the innovative HPI sports software comes into play.

"With our solution, coaches and analysts can quickly locate specific game situations and recognize patterns of their own team and of the opposing team in video recordings," says Keven Richly from the four-man HPI development team. Technically-speaking, the continuously changing positions of the players are investigated with specially optimized algorithms developed in the HPI main memory database technology. The interactive tactic board uses a new graphical enquiry language for video analysis.

Coaches and scouts are not just limited to one game in the analysis, but can draw on all the recorded games of the own team as well as those of the opposing team. "Not all game patterns are as striking as, say, Arjen Robben." The Bayern-München player generally flanks, then comes up from the inside and shoots," says Richly. In real-time the trainer will be able to determine what common mistakes his team makes, how the upcoming opponent reacts to such errors and therefore what urgent counter-strategies need to be developed.

Additionally, on the interactive tactic board adopted scenarios can be modeled, such as how an opponent reacts to certain game openings. The system then retrieves all corresponding entries from a database and shows

the video sequences. From the position data of the player a kind of two-dimensional radar map is created that allows an overview of the entire playing field.

Naturally all of the especially important events such as goals can be visualized. The HPI tactic board then displays all of the positions from which the opposing team has shot on goal. "Our software won't replace a scout, but it takes over a lot of work," says Richly. Besides that the tactic board isn't just limited to soccer. "It can also be adapted to a great many other team sports."

Hasso Plattner Institute (HPI) is among the largest CeBIT exhibitors in the subject area of „Research and Innovation“ this year. In Hall 9 at booth D44, the computer scientists present the results of their latest research and development in the world of "Big Data" for the "d!conomy" – the word coined for the "digital economy," which describes the transformation leading to a fully networked economy. At its booth space, encompassing more than on 380 square meters, HPI shows, for example, how corporate decision-makers have innovation data support at their fingertips during a meeting in a kind of "cockpit." A new financial simulation software is also being presented that enables lightning-fast profit analysis. HPI demonstrates the innovative possibilities for Big Data analysis not only in sports but also in disease containment on a global scale

Note to the editors:

You can find detailed material (texts, photos, videos) at our CeBIT website: www.hpi.de/cebit.

You can find interviews with prominent CeBIT guest on the topic of IT location Germany during the fair at www.it-gipfelblog.de.

Press Contact HPI: presse@hpi.de

Hans-Joachim Allgaier, M.A., Press Spokesman, Marketing and Public Relations Manager, Tel.: 0049 331 5509-119, Mail: allgaier@hpi.de. Rosina Geiger, Public Relations and Marketing Manager, Tel.: 0049 331 5509-175, rosina.geiger@hpi.de