

Press Release

Erlangen,
March 5, 2012

GoalRef Goal-Line Technology Advances to Final

The International Football Association Board (IFAB) announced that it had shortlisted two goal-line technologies and approved them for a final round of testing. One of the remaining candidates is the GoalRef system developed by the Fraunhofer Institute for Integrated Circuits IIS, which is based in Erlangen, Germany. Fraunhofer IIS scientists are fielding a radio-based solution that tells the referee immediately whether or not a goal should be awarded.

In November and December 2011, the IFAB had eight different goal-line technologies trialed and assessed against a set of criteria defined by the Swiss Federal Laboratories for Materials Science and Technology (EMPA). Based on the results, two systems have now been selected for the next phase of testing. One of them is the GoalRef system developed by Fraunhofer IIS.

By producing low magnetic fields around the goals, GoalRef creates the radio equivalent of a light curtain. As soon as the ball has wholly crossed the goal line between the posts, a change in the magnetic field is detected. A goal alert is then instantaneously transmitted to the game officials using an encrypted radio signal, with a message displayed on their wristwatches. The system uses a very small and compact electronic device embedded in the ball manufactured by Select (Denmark). Fraunhofer IIS has developed the GoalRef technology in cooperation with the Danish company and is currently working towards commercialization. „Products based on the GoalRef technology have enormous potential.

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Beyond football, they can be used in other team sports at both professional and amateur levels," says project leader Ingmar Bretz.

Complementary to GoalRef, Fraunhofer IIS offers a supporting technology for match and training analysis: The RedFIR® system tracks all movements of the ball and players as they occur. By generating a real-time 3D visualization of match and training performance, it provides an objective basis for instant analysis and sideline feedback. Additionally, the information gathered can be used to enrich live media coverage.

The effectiveness of training sessions is further improved by the FitnessSHIRT: Sensors integrated in a shirt monitor the players' heart rates and breathing. The combination of these vital parameters with the RedFIR® location data help to maintain optimum training conditions.

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About Fraunhofer IIS

Founded in 1985 the Fraunhofer Institute for Integrated Circuits IIS in Erlangen, today with more than 750 staff members, ranks first among the Fraunhofer Institutes concerning headcount and revenues. As the main inventor of mp3 and universally credited with the co-development of AAC audio coding standard, Fraunhofer IIS has reached worldwide recognition. It provides research services on contract basis and technology licensing.

The research topics are: Audio and video source coding, multimedia realtime systems, digital radio broadcasting and digital cinema systems, integrated circuits and sensor systems, design automation, wireless, wired and optical networks, localization and navigation, imaging systems and nanofocus X-ray technology, high-speed cameras, medical sensor solutions and supply chain services.

The budget of more than 95 million Euro is mainly financed by projects from industry, the service sector and public authorities. Less than 25 percent of the budget is subsidized by federal and state funds.

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