Smart Soccer Ball Misses Its Goal

Soccer's international governing body has canceled plans to use an RFID-enabled scoring system at the 2006 FIFA World Cup international soccer tournament.

By Jonathan Collins

Dec. 5, 2005—Despite a strong lineup and plenty of practice time, RFID sports technology start-up Cairos has ultimately dropped the ball. The company had hoped its system would be used as a verification tool at the 2006 FIFA World Cup international soccer tournament, for scoring scenarios in which a judge found it difficult to determine if a ball had crossed the goal line. However, sports equipment manufacturer Adidas, which will supply balls for the event, now says the system needs further development and, therefore, will not be employed after all.

Developed by Cairos, Adidas and the Fraunhofer Institute for Integrated Circuits, a German state- and industry-sponsored technical research organization, the system places up to 12 interrogators (readers) around a stadium that can detect an RFID tag inside a ball and track its exact position in real time throughout any match.

The dime-sized tag emits a 2.4 GHz signal 2,000 times per second, which can be read from up to 300 meters (985 feet) away from an interrogator (reader). Several readers receive the signal simultaneously, allowing the system's software to determine the exact location of the ball.

After the system was tested initially Under-17 World Championship held in Peru in October, the FIFA, the international governing body of soccer, said the technology—dubbed "Smartball"—had a positive future but required some improvements before it could be sanctioned for use in the World Cup. That process will now be delayed as a further technology trial set for this month at the FIFA Club World Championship Toyota Cup Japan 2005 has also been cancelled.

According to Adidas, the technology requires further development and testing before it can be used at tournaments of the highest professional level. Cairos was formed in 2000 with the intention of developing an RFID-based system specifically geared to help determine whether a goal has been scored and, thus, ensure the accuracy of goal-line decisions. It turned to the Fraunhofer Institute to help develop a system Cairos believes can be used for basketball, tennis, U.S. football and a number of other sports. The company claims its long-range, real-time RFID tracking system can also be used for commercial applications, including tracking dollies on airport tarmacs, patient and equipment in hospitals and firefighters at dangerous locations.