

'Sound of Football' project allows blind to play football (w/ video)

November 11 2011, by Bob Yirka



(PhysOrg.com) -- In a show of just how far Smartphone technology has come, a new group funded by the Pepsi Refresh Project, has put together various technologies that allow blind people to play football using nothing but sounds that come to them from headphones connected to an iPhone mounted on their helmet. The idea, developed by Akestam Holst and Society 46, is to use surround sound technology to allow someone who cannot see, to move around and interact in an unknown and constantly changing real world environment. To demonstrate their technology, they set up a match between a group of sighted, but

blindfolded former pro footballers, and a group of blind players on a small portion of a real stadium.

To create the sounds that guide the players, the team used 3D [camera](#) systems provided by Tracab mounted on the stadium walls. The cameras are connected to computers with [tracking software](#) that allows for the tracking of each player, the ball and the location of the goal posts. Each tracked entity is assigned a unique sound which is modified based on its relative location to each player then broadcast to the iPhone on the player's helmet. Thus, when a player on the field approaches another, the sound that is generated not only gets louder, but is "projected" in three-dimensional space, which means, the player can tell where the other player is relative to them, just as people can tell where someone is relative to them who is walking on a tiled floor with hard soled shoes, by the direction of the sound waves coming at them. Because of this effect, the [sound](#) can be adjusted in real time when the player listening moves on the field. And because of the gyroscope and the compass in their [iPhone](#), the effect can be adjusted as the player turns their head, providing a continuous perspective.

In short, the whole system allows each individual player to "hear" where everyone else is, where the ball is, where on the field they are, and where the goal posts are. Based on that information, each player can then move about as they would were they able to do so using vision. Granted, the system can't possibly offer anywhere near the same sensory experience as those who can see, but it is enough to allow the teams to both play and compete.

In the end, each side had its own advantages. The ex pros obviously had far superior ball skills, while the blind players had far more experience moving around the real world without benefit of sight. And it appears things worked out rather evenly, as the final score was 1-1.

More information: thesoundofffootball.com/

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