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An Article on

HAWK-EYE TECHNOLOGY

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ABSTRACT

In modern day sports, people are very keen on using technology. Technology plays a key role in making sports very attractive, it spreads the game to each and every corner of the country, making the game more popular and desired. People who participate directly or indirectly in sports use technology in their own way. In this article I would like to emphasize on one such technology called "HAWK-EYE" which made modern sports more attractive and errors free. "Hawk-Eye" is one of the most popular technologies used in modern day sports. Hawk-Eye is a term which originally means Bird's view. It is a combination of two terms 'Hawk' and 'Eye'. This technology is being used in many sports like Cricket, Tennis and Golf etc. This technology helps the Umpires, Match Referees in taking the correct decision. Ultra Motion, Hot-Spot are other technologies which are equally used in modern sports, but my article is about "HAWK-EYE" technology.

KEYWORDS: Hawk-Eye, Technology in Modern Sports.

1.HISTORY OF HAWK-EYE TECHNOLOGY:

The origin of Hawk-Eye technology was done in a series of steps; Initially Dr Paul Hawkins and David Sherry submitted a patent on Hawk-Eye technology but they withdrew their request. Later Hawk-Eye Innovations and Sunset + Vine a television production company jointly started a venture. This was bought by Sony Corporation in March 2011.

2.METHOD OF OPERATION:

A video processing system for use in ball games played within a predetermined area on a pitch or the like such as cricket, comprising at least four video cameras arranged in spaced apart relationship at fixed positions around the said area, a video processor and ball tracker to which signals from the cameras are fed, a data store for date which models the said area and includes data representative of characteristic features positioned thereon for use in performance of the game, and a store for data appertaining to rules and/or key events of the ball game played, the video processor being operative to; (a) identify in each frame, from each camera, groups of pixels corresponding to the image of a ball; (b) compute for each frame the 3D position of an image thus identified using ball image data from at least two different cameras; (c) predict a ball flight-path from the said 3D ball position as computed in successive frames; and, (d) map the predicted flight-path on the modelled area so as to identify any interaction with one or more of the said characteristic features, which interaction signifies the occurrence of a key event or a rule infringement.

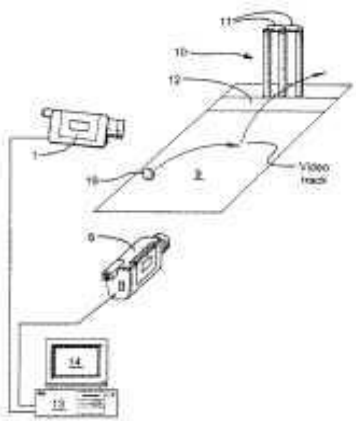
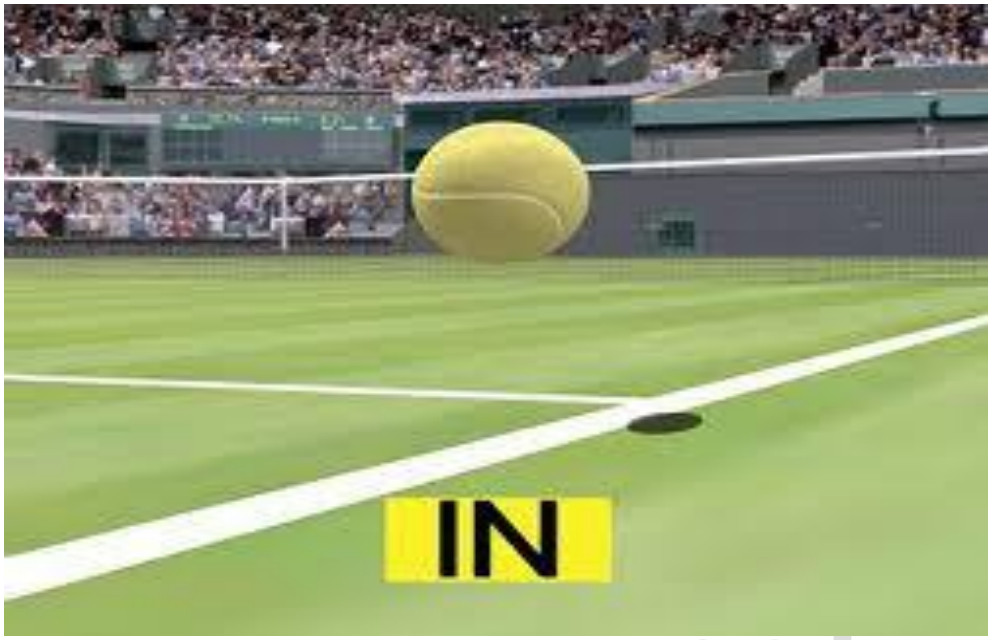


Fig.No: 1



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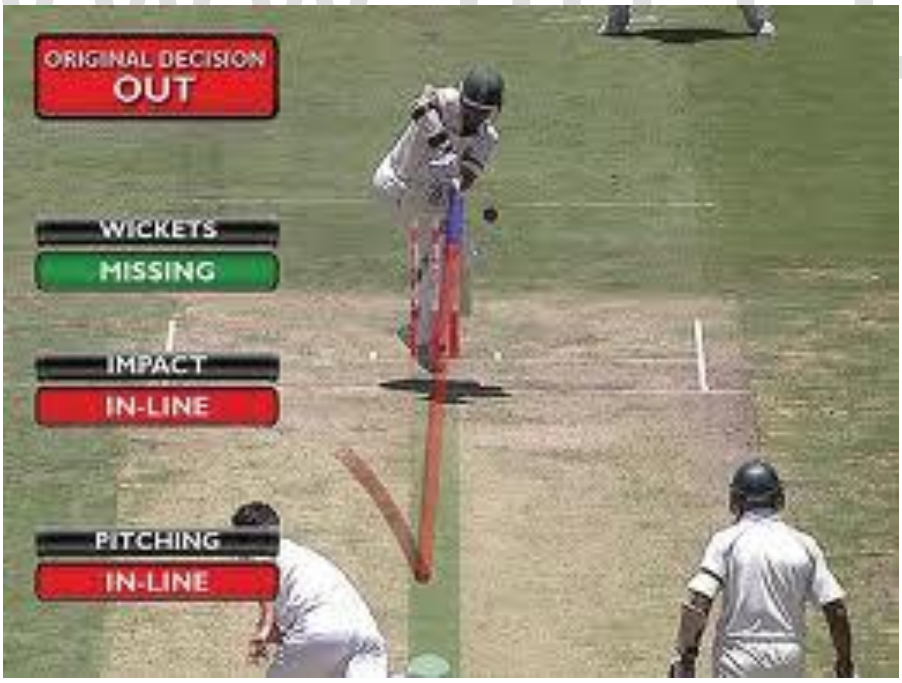

Fig.No: 3

3.RELIABILITY OF HAWK-EYE TECHNOLOGY:

Hawk-Eye is not always reliable; here are some cases which prove it:

- **Wimbledon 2007**

Making its debut at Wimbledon, during the final Hawk-Eye called a shot by Rafael Nadal marginally 'in'. Roger Federer subsequently asked for the system to be switched off, firmly believing the shot was out, but his request was denied.

- **Dubai 2007**

Rafael Nadal was furious when he believed a ball to be 'out' that Hawk-Eye had called 'in'. He referred to a mark on the court that seemed to prove his point, but the call stood. The makers of Hawk-Eye later explained that Nadal could not see the full stretched impact of the ball on the surface, whereas Hawk-Eye could.

- **Indian Wells 2009**

At a quarterfinal between Ivan Ljubicic and Andy Murray, Hawk-Eye incorrectly called a shot by Murray 'in'. Later, it transpired it had accidentally taken an image of a second bounce, a rare occurrence.

- **Australia 2009**

In a match between Roger Federer and Thomas Berdych, the latter challenged an 'out' call but Hawk-Eye didn't work due to a large shadow on the court, and the call stood.

- **French Open 2010**

Novak Djokovic was incensed when the umpire failed to spot that his shot had fallen inside the line, and was called 'out'. The French Open is the only grand slam not to use Hawk-Eye.

4.CONCLUSION:

With some appreciations and with some rejections Hawk-Eye technology is still in use in many sports. I would like to conclude this article by saying that Hawk-Eye technology has made job of Umpires and Match officials very easy and made the game free from controversies.

References:

1) http://www.howitworksdaily.com/technology/top-five-facts-controversial-hawk-eye-moments/

2) http://worldwide.espacenet.com/publicationDetails/biblio?CC=WO&NR=0141884&KC=&FT=E&locale=en_EP

3) http://www.google.co.in/search?q=HAWK-EYE&source=lnms&tbm=isch&sa=X&ei=6aGdUcKkA5DqrQfQ6oCgBA&sqi=2&ved=0CAcQ_AUoAQ&biw=1821&bih=832

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