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US Track and Field and BMW Join for Olympic Push

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Long jumper JaRod Tobler practices with BMW camera system

USA Track and Field and German automotive giant BMW are working together to increase the efficiency of training analysis for athletes as they prepare for next summer's Olympic Games in London.

The company has developed a dual-vision camera for movement analysis which records critical data in real-time and transfers it to an on-site laptop. That way, an athlete can immediately refine his or her technique during a training session rather than wait hours – sometimes days – to have the training video studied at a lab.

Phil Cheetham, the senior sport technologist for the U.S. Olympic Committee, told Wired.com that release points for throws and takeoff characteristics for jumpers, such as long jumpers, are some of the vital types of information that system can gather.

“It looks like it’ll be able to see the javelin being released from the hand,” said Cheetham, who competed as a gymnast for Australia in the 1976 Montreal Games. “Consequently, we’ll be able to look at the release angle, the attack angle, the height of release.”

Given the intricacies involved in those actions, as well as in jumping motions, Cheetham said that any type of improved efficiency in those athletes’ techniques is crucial. “It’s going to be extremely helpful if you could...have the athlete wander by and look at the [computer] screen,” he said.

Darren Liccardo, a senior technology engineer for the BMW Group Technology Office, says that algorithms the tech office is writing for the camera system’s software will track selected objects; the camera records action at a rate of approximately 60 frames per second. It takes an approach similar to motion-capture technology, although athletes don’t have to wear any special markers on their body.

The system can track objects such as an athlete’s head – to provide a barometer for how fast that person is moving – or, for those in throwing events, a javelin, discus or shot. Unlike the full-body analysis studied by motion-capture, this form of movement analysis is less detailed.

Yet the instantaneous nature of the information, if even gleaned from a smaller number of data points, gives athletes and their coaches real-time data.

Liccardo and his staff had been searching for a different sports setting in which to test their movement tracking software. BMW had been developing it in hopes it could warn nighttime drivers of a person or an object suddenly in the vehicle’s path. Team USA’s Track & Field team proved a natural fit.

BMW hopes to sustain this technology long-term for Olympic and non-Olympic athletes. Liccardo pointed out that baseball players and quarterbacks, in particular, could benefit from point-of-release throwing information.

For now, the focus is on how USA Track & Field athletes can improve through a more efficient way of training.



Kyle is a [New York-based sportswriter](#) who has written for [SLAM](#), ESPN the Magazine, SI.com and ESPN.com.