

BMW Team USA Sponsorship Fact Sheet

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Driving Athlete Performance

As part of its sponsorship commitment, BMW has applied its resources and technologies to advance the training and performance goals of Team USA.

The following represent projects within BMW's technology transfer initiative that have been developed in response to performance and real-time data needs identified by U.S. Paralympics Track and Field, USA Bobsled and Skeleton, USA Track and Field and USA Swimming.

BMW Wheelchair Redevelopment – U.S. Paralympics Track and Field

BMW designed a new racing wheelchair for use by athletes of the U.S. Paralympics Track and Field Team in the Rio 2016 Paralympic Games.

As with the development of its previous technology projects for Team USA, BMW worked closely to collaborate with the U.S. Paralympics Track and Field team in identifying and addressing the need for potential improvements. By immersing themselves into the athletes' world and learning the intimate details of the sport, BMW engineers and designers designed a wheelchair that maximizes efficiencies and translates athlete energy to the road.

The new racing wheelchair draws upon the aesthetics and engineering of the automaker's signature vehicle design. Encompassing BMW's core competencies and fundamentals, the wheelchair features modernized aerodynamic efficiencies, carbon fiber material, a complete chassis redesign and a personalized approach for customized athlete fit.

The final fleet of six wheelchairs is set to make its competitive debut at the Rio 2016 Paralympic Games.

BMW Bobsled Redevelopment – USA Bobsled and Skeleton

In collaboration with USA Bobsled and Skeleton Federation, BMW undertook a complete redesign of a new two-man bobsled in advance of the Sochi 2014 Olympic Winter Games. The completion of the project replaced a 20-year-old platform Team USA had been using.

To help ensure the caliber of Team USA's sleds matched the world-class talent of its athletes, BMW applied a process similar to its vehicle development, most significantly the application of BMW EfficientDynamics, using lightweight materials like carbon fiber to optimize the sled's weight placement to distribute and balance the regulation-required weight.

In designing the two-man sled with these objectives in mind, BMW's process reevaluated the complete vehicle system: cowling aerodynamics and construction, chassis and steering geometries, athlete fitment and integration were all critical focal points. Computer aided modeling, computational fluid dynamics (CFD), full size wind tunnel testing, on track testing, and athlete scannings were all tools in BMW's development approach.

Team USA won three Olympic medals in BMW sleds: one silver, two bronze. The men ended a 62-year medal drought, while the women became the first in U.S. history to earn multiple medals in bobsled.

BMW Motion Tracking System – USA Swimming

BMW has been in collaboration with the high performance team at USA Swimming on a motion tracking system that analyzes a swimmer's dolphin kick within the allowed 15 meters of underwater swimming and provides quantitative performance data to coaches. Initially developed in advance of the London Games, the exploratory tool has since undergone several evaluations and improvements in hopes of continuing to produce insights never before possible.

Powered by the same combination of computer vision and software algorithms that are at the core of automated driving systems in BMW vehicles, the motion tracking system uses LED lights to track six points on the swimmer's body – wrists, shoulders, hips, knees, ankles and toes – as well as kick depth and rate. With the aggregated data, coaches can pinpoint the performance attributes of specific parts of the body and see how well all parts are working together to increase speed.

This technology aims to provide quantitative data analysis of a swimmer's movements in the water, which USA Swimming hopes to continue applying in the evaluation of how major and minor adjustments in form and technique improve a swimmer's dolphin kick at starts and turns, where a race can be won or lost.

BMW Velocity Measurement System – USA Track and Field

BMW's first technology transfer project was a velocity measurement system created in collaboration with sports scientists at the USOC and USA Track & Field. Developed at the BMW Group Technology Office USA in Mountain View, Calif., the system captured an athlete in motion and automatically calculated and delivered performance metrics for coaches to use in training long jumpers. By measuring and providing real-time analysis of three key parameters in the execution of a long jump – horizontal approach velocity, vertical take-off velocity and take-off angle – the system was completely unique in its offering to coaches and athletes in training scenarios.

BMW Team USA Sponsorship

BMW Group (including BMW, MINI and BMW Motorrad) is the Official Mobility Partner of the United States Olympic Committee (USOC) and the U.S. Olympic and Paralympic Teams through 2016. BMW Group is also the Official Mobility Partner of five National Governing Bodies (NGBs) – U.S. Paralympics Track and Field, USA Bobsled and Skeleton, USA Track and Field, USA Swimming and USA Golf.

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