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For immediate release Aug. 4, 2008

## **World's First Commercial Haptic Device Using Magnetic Levitation**

PITTSBURGH and LOS ANGELES—Butterfly Haptics, a new company grounded in 14 years of research and development at Carnegie Mellon University has announced the world's first commercially available haptic device based on magnetic levitation.

The company will be exhibiting and demonstrating several prototype maglev haptic systems in the New Tech Demos pavilion at SIGGRAPH 2008, to be held in Los Angeles, Calif., August 11-15, 2008. SIGGRAPH is the premier international conference and exhibition for computer graphics professionals.

Maglev Haptics™ is a revolutionary technology enabling high-fidelity interaction with virtual or remote environments through the sense of touch. With this technology, the user grasps a handle levitated by strong magnetic fields, moving it freely in space through a comfortable motion range, sending position and orientation information to the user's application. The application, in turn, outputs precise forces and torques to the handle.

Butterfly Haptic's Maglev 200™ system is the first commercial haptic system to employ the principles of Lorentz levitation to give the user an extremely realistic haptic experience. For maximum performance the system includes its own high-performance QNX™-based embedded controller, off-loading burdensome computations from the user's host computer. The hardware incorporates several highly innovative design features and advanced manufacturing technologies to provide high quality and reliable operation at a reasonable cost.

With the exception of the new Butterfly Haptics systems, all haptic-interaction devices currently available are small back-driven robot arms, which include mechanical elements such as motors, encoders, linkages, gears, belts,

cables, and bearings that can limit fidelity due to friction, backlash, link bending, and motor cogging. These drawbacks are eliminated with Maglev Haptics™.

Potential applications of the Maglev 200™ system include medical or surgical training with virtual patients; tele-microsurgical procedures; visualization of complex multi-dimensional data sets such as those produced by computational fluid dynamics, medical imaging, or earthquake simulations; character animation and entertainment; scientific studies of touch; effort-reflected flight simulation; computer-aided design; remote robot control; and micro- and nano-manipulation.

### **About Butterfly Haptics**

Founded in December, 2007, Butterfly Haptic's mission is to provide the highest performance haptic interface systems for use in research, development, and the creation of advanced applications. Butterfly Haptics, located in Pittsburgh, Pa.-- [www.butterflyhaptics.com](http://www.butterflyhaptics.com)-- partners with a worldwide network of quality manufacturing services and suppliers. "Butterfly Haptics," "Maglev Haptics," and "Maglev 200" are trademarks of Butterfly Haptics, LLC. Other brand/product names are trademarks of their respective holders.

### **About SIGGRAPH 2008**

SIGGRAPH 2008 will bring an estimated 30,000 computer graphics and interactive technology professionals from six continents to Los Angeles, Ca., for the industry's most respected technical and creative programs focusing on research, science, art, animation, gaming, interactivity, education, and the web from Monday, 11 August through Friday, 15 August 2008 at the Los Angeles Convention Center. New Tech Demos (formerly Emerging Technologies), will present 42 different creative, innovative technologies and applications in many fields including displays, robotics, input devices, and interaction techniques.

Registration for the conference and exhibition is open to the public.  
More details are available at [www.siggraph.org/s2008](http://www.siggraph.org/s2008).