



Presse-Information Press release Communiqué de presse



KUKA



Heli Trainer sets new standards in pilot training

Heli Trainer flight simulator presented exclusively at the ILA

Wallerstein / Augsburg / Tübingen, June 2010 - On the occasion of the ILA, the world's leading air trade show, Heli Aviation GmbH together with KUKA Roboter GmbH and the Max Planck Institute for Biological Cybernetics will be presenting a concept study for a new helicopter flight trainer. From 8 to 13 June 2010, the first development phase will be unveiled to the public at the exhibition ground of Berlin-Schoenefeld Airport, Hall 1, Stand 127.

The first flight hours of a helicopter pilot's training are particularly intensive and dangerous. This is why several approaches have already been taken in the development of flight simulation. In contrast, the aviation company Heli Aviation GmbH, the leader in robotic technology KUKA Roboter GmbH, and the Human Perception, Cognition and Action Department of the Max Planck Institute for Biological Cybernetics are taking a different path and working together on the development of the Heli Trainer.

The aim of this joint project is to develop a realistic flight trainer that will enable pilot training to be effective, safe and cost-efficient. At the same time, the quality of the training remains at the same high level. This is because critical flight maneuvers can be repeated as often as required and simulated right up to a safe crash landing whereas in practical flight training, the flight instructor has to intervene immediately when incorrect flight control actions are made.

With the Heli Trainer, a pilot trainee requires less time to develop a feel for movements, understands the consequences of his flight control actions better and learns maneuvers in a safe environment with a steeper learning curve.

One of the greatest technical challenges of this project is to simulate the movements of complex, real systems in the smallest of spaces in order to give pilots the feeling that they are in a real aircraft. Stewart platforms are the most common motion simulators in use because they can move large payloads and can also achieve high accelerations. A major disadvantage however is their restricted workspace and motion range.

This is why the developers of the Heli Trainer are pursuing a new design based on the KUKA robot, type KR 500 TÜV, further developed for motion simulation by the Max Planck Institute for Biological Cybernetics. A helicopter cell, type Guimbal Cabri G2, is attached to the 6-axis, heavy-duty robot with a carrying capacity of up to 500 kg. It has space for up to two people who can learn realistic helicopter maneuvers in an “original” cockpit. The robot from KUKA in Augsburg is the only industrial robot in the entire world certified to carry passengers. Thanks to its six degrees of freedom and its design, the robot offers a considerably larger workspace and range of motions than conventional platforms. As an option, a linear traversing axis can be added to the robot to simulate real landing and take-off maneuvers.

About the Heli Trainer - www.heli-trainer.de

About Heli Aviation GmbH - www.heli-aviation.de

Heli Aviation GmbH, having evolved from Rainbow Helicopters GmbH, an established helicopter service company, can look back over 17 years' experience of commercial flying. With three locations in Wallerstein, Worms and Tenerife, Heli Aviation is one of the leading helicopter companies in Germany. Under the new company name, the helicopter services are being expanded and form the traditional mainstay of the three service areas. The second area is the initial and ongoing training of prospective pilots, professional pilots and crews. The third segment is the development of helicopter technology. Heli Aviation is part of the medium-sized ohnhaeuser company group with a total of about 250 employees and over three decades of experience in the aerospace industry.

About KUKA Robot Group - www.kuka-robotics.com

KUKA Roboter GmbH, with its headquarters in Augsburg, is a KUKA Aktiengesellschaft company and ranks among the world's leading suppliers of industrial robots. Core competencies are the development, production and sale of industrial robots, controllers, software and linear units. The company is the market leader in Germany and Europe, and the number three in the world. The KUKA Robot Group employs about 2000 people worldwide. Of these, some 1100 are employed in Germany. In 2009, sales totaled 330.5 million euro. 25 subsidiaries provide a presence in the major markets of Europe, America and Asia.

About the Max Planck Institute for Biological Cybernetics - www.kyb.mpg.de

The Max Planck Institute for Biological Cybernetics in Tübingen works on the elucidation of cognitive processes using experimental, theoretical and methodological approaches. The Human Perception, Cognition and Action Department under Prof. Dr. Heinrich H. Bülthoff uses traditional psychophysical methods, computer graphics and simulation technology to advance our understanding of perception and cognitive processes in the human brain. About 70 biologists, computer scientists, mathematicians, physicists and psychologists are working on perception processes such as object recognition/categorization, sensorimotor integration and spatial cognition. In the CYBERNEUM opened in 2005, computer graphics and virtual realities are used for simulating natural environments to conduct research on human perception and action under controlled test conditions in a closed perception-action loop. Prof. Bülthoff's department is a major partner in various international and European research projects.