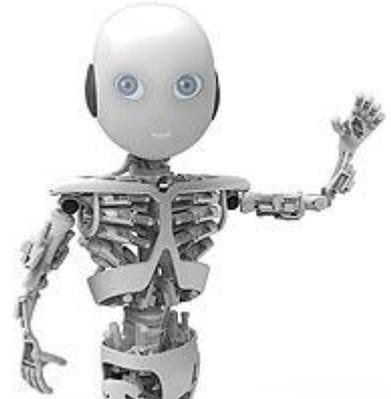


The final push: In two months, Roboy will be brought to life.

More than 50 brushless dc motors, gearheads and controllers from maxon motor are responsible for the humanoid's precision movements.

Roboy has a bright future as he represents a completely new generation of robots. The pioneer project of the Artificial Intelligence Laboratory (AI Lab) of the University of Zurich started six months ago, with the target of developing one of the most modern humanoid robots within nine months. On March 9, 2013, Roboy will be presented to the public at the "Robots on Tour" robotics exhibition held in Zurich on the Lab's 25th anniversary.



Since the project started in the summer of 2012, Roboy's development has progressed extremely well. The torso of the 1.30 m robot has been assembled and the two arms are finished and can move; furthermore Roboy has now received a new face. This friendly face is projected onto the head of the robot with a miniature projector and gives him a wide range of facial expressions. Roboy will also be able to recognise faces that he has learned beforehand. The humanoid is a so-called "soft robot" – a further development of "Ecce", his famous brother, which was also driven by DC motors from maxon. Roboy has been designed as a humanoid tendon-controlled robot (in "normal robots", the motors are in the joints); this will enable him to move almost as elegantly as a human.

More than 50 high performance motors and positioning controllers.

As a main project partner, maxon motor supplies various combinations of brushless DC drives that provide Roboy with controlled movement. In total, more than 50 brushless DC motors, combined with gearheads and encoders, have been installed in the robot. Additionally, all of the motor controllers are from maxon motor. To control the motors and execute Roboy's movements, a master/slave motor controller system has been configured. The digital positioning motor controllers are from the EPOS2 series. Programming of the control functions on the slave system was performed in cooperation with maxon engineers. maxon's drive specialists have many years of experience with robotics in many industries, e.g. for medical technology, industrial automation and aerospace. Currently maxon products are in use in the two Mars rovers "Curiosity" and "Opportunity".

"Robots on Tour" cyborg and robot show

Robot fans, robots and cyborgs from all over the world are coming to Zurich for the "Robots on Tour" (robotsontour.com) world congress. In addition to getting to know Roboy, who will be featured on the maxon motor stand, visitors will get a chance to shake hands with Affeto from Osaka and Kibo, Silbot and Mere from Korea. The topic of robotics will be presented in a variety of demonstrations and shows from RoboSoccer playing football, quadcopters staging an airshow as well as a robotic theatre drama being performed. A focal topic is the relationship between humans and robots and the questions that arise from it. What potential does robotics hold for mankind? What dependencies could result? There will be lots of opportunity for scientific exchange in the podium discussions with renowned researchers such as Rodney Brooks, former director of MIT CSAIL (Computer Science and Artificial Intelligence Laboratory) and founder of "Rethink Robotics".

maxon motor is having a prize draw for a VIP weekend in Zurich, including tickets for attending the "Robots on Tour" exhibition. Download the maxon motor magazine "driven" onto your tablet PC (iOS, Android) and participate in the competition. For more information, go to: <http://www.maxonmotor.ch/maxon/view/content/driven>

maxon motor ag

Brünigstrasse 220

Postfach 263

CH-6072

Sachseln

Tel.: +41 (41) 666 15 00

Fax: +41 (41) 666 16 50

E-mail: info@maxonmotor.com

Internet: www.maxonmotor.com

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Fig. 1: The assembly of motor units for Roboy, consisting of motor, gearhead, encoder and controller. Photo: Awtec ©2012 www.robey.org



Fig. 2: The completed and assembled torso of Roboy. Photo: Awtech ©2012 www.robey.org