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RIKEN

New robot to reduce burden on care facilities

In an effort to cope with the challenges of an aging population, a new robot making use of the latest in sensor, control, information processing, mechanical and materials technology has been developed to assist personnel and patients at care facilities. The product of joint research by RIKEN and Tokai Rubber Industries (TRI), the new robot, named RIBA (Robot for Interactive Body Assistance), is the first of its kind in the world, capable of safely lifting and moving a human patient of up to 61 kg from a bed to a wheelchair and back.

The task of lifting and moving a patient, carried out several times a day, is one of the most exhausting for care-givers. In assisting in this task, RIBA brings together cutting-edge sensor and information processing technology developed at RIKEN with materials technology developed at TRI, overcoming safety and performance limitations of its predecessor, an earlier model named RI-MAN. Using human-like arms equipped with high-precision tactile sensors and a body encased in a soft exterior of urethane foam, RIBA's design guarantees patient safety and comfort.

As one part of a larger strategy to pursue advances in robot technology for care-giving support, the successful development of RIBA marks a critical step toward tackling the problems of an aging society. The RIKEN-TRI Collaborative Center for Human-Interactive Robot Research (RTC), where RIBA was developed, envisions bringing robots like RIBA to market in the near future.

For more information, please contact

Dr. Toshiharu Mukai
Robot Sensor Systems Research Team
RIKEN-TRI Collaboration Center for Human-Interactive Robot Research
Tel: +81-(0)52-736-5867 / fax: +81-(0)52-736-5868

Ms. Saeko Okada (PI officer)
Global Relations Office
RIKEN
Tel: +81-(0)48-462-1225 / Fax: +81-(0)48-462-4715
Email: koho@riken.jp

For more information, please refer to the website of the RIKEN-TRI Collaboration Center for Human-Interactive Robot Research.

<http://rtc.nagoya.riken.jp/RIBA/index-e.html>

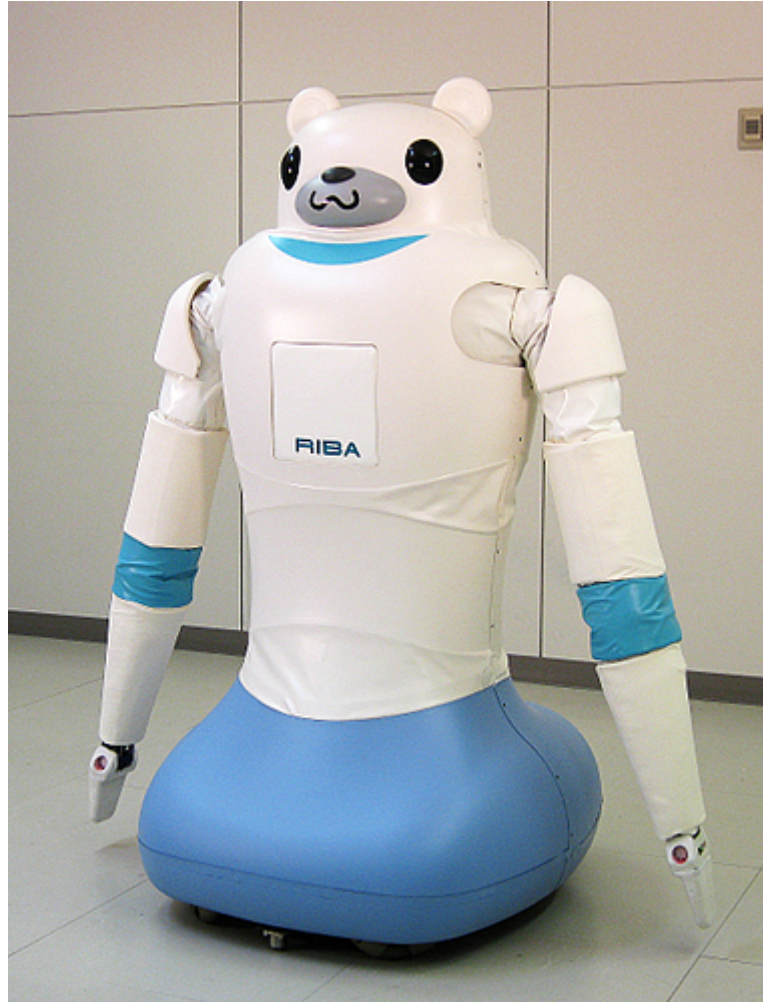


Figure 1 RIBA

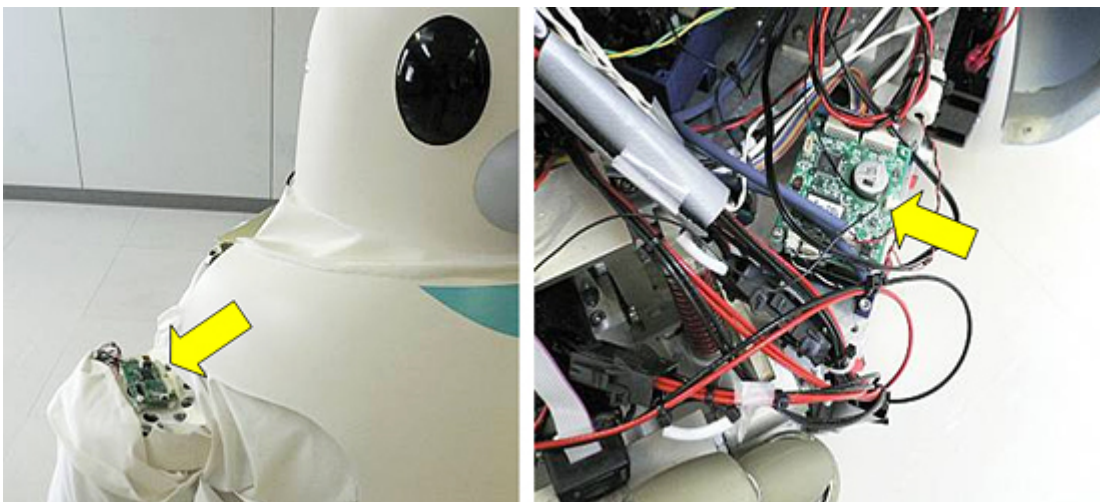


Figure 2 RIBA's onboard information processing circuit board

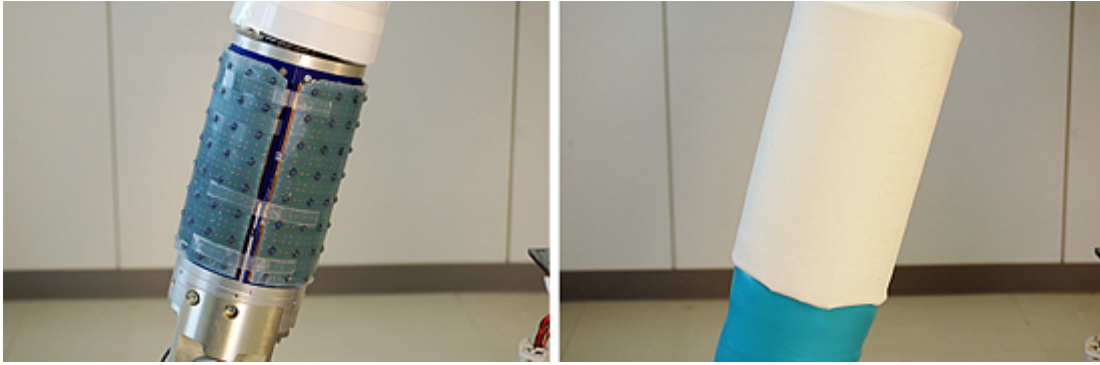


Figure 3 Tactile sensors covering arm exterior

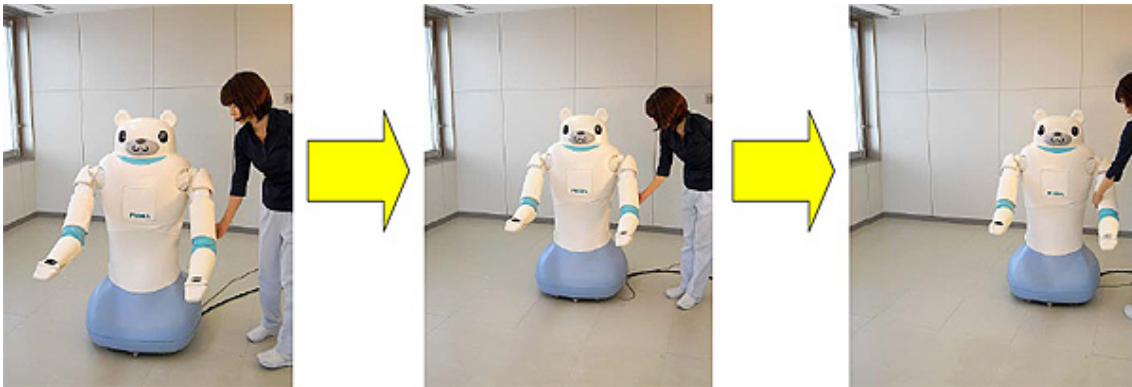


Figure 4 Tactile guidance system

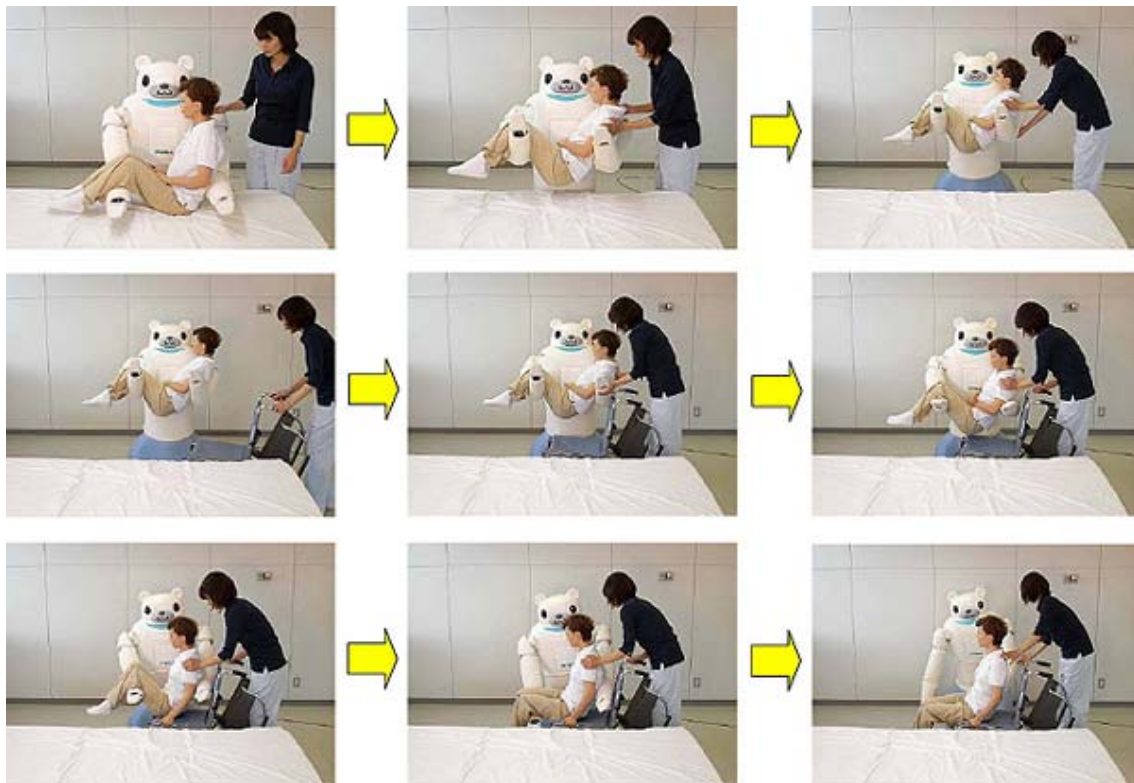


Figure 5 Lifting a person from a bed to a wheelchair