## Information and Communication Technology

## A Tele-Operated Humanoid Robot Drives a Backhoe in the Open Air!

The Intelligent Systems Institute of AIST, Kawasaki Heavy Industries, Ltd., and Tokyu Construction Co., Ltd. have achieved a world-first success in their joint development of a tele-operated humanoid robot that wears protective clothing and drives an industrial vehicle (backhoe) outdoors in lieu of a human operator as shown in Fig. 1. It shows us that a humanoid robot can expand its capability by using machines designed for the human even in the rain. The use of a tele-operated humanoid robot has a possibility to make all machines tele-operated without any modifications and do also incidental tasks instead of the human.



Teleoperated humanoid robot drives a backhoe.

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