

December 13, 2005

Press Release

YRP Ubiquitous Networking Laboratory

**First in the World!
An Automatic Cargo Identification Truck
that Improves Distribution Efficiency
by Utilizing RFID Technology.**

The YRP Ubiquitous Networking Laboratory (Shinagawa, Tokyo, Director: Ken Sakamura) will conduct demonstrations of a truck that automatically recognizes its loaded cargo at the TRONSHOW 2006. This automatic cargo recognition is innovative technology that prevents losses caused by errors in warehouses etc. when loading cargo, such as loading cargo on trucks going to the wrong destination or leaving some items behind.

Detecting whether returnable boxes in cargo containers have been loaded on trucks will make it possible to know what has been loaded on the truck. Conventionally, it was common that workers would check it with their eyes when returnable boxes were loaded, but if cargo is automatically identified as well as checked visually, it will enable to identify mistakes with higher possibility.

Automatic recognition trial using passive tags or other devices has been performed in the past, but the low identification rate was a problem. For the (foregoing) exhibition, highly accurate automatic cargo recognition with an identification rate of over 99% was achieved using active electronic tags with built-in batteries called, "Dice". Dice are micro active electronic tags, developed by the YRP Ubiquitous Networking Laboratory, that use very low-power 315 MHz radio waves for full-duplex communication with base stations. They operate for over 2 years with button batteries and communicate at a visible distance of over 10 meters. Furthermore, multiplex communication of over 1,000 Dices with a single cell has been achieved. Also, its built-in sensors can monitor information on its surrounding environment, such as temperature and moisture during transportation. Using such information on its surrounding environment, Dice can be utilized for the efficient management and quality assurance of products.

At the exhibition, besides the above demonstrations, as part of our effort towards more efficient distribution, demonstrations on how instructions can be given to workers more

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efficiently using the UC (joint exhibit with NIPPON YUSEN KAISHA), how returnable boxes on a conveyer roller can be automatically recognized, and how distribution history can be automatically registered in collaboration with a food traceability system etc. are scheduled.

(The research results of "Research and Development of Ultra-tiny Chip Networking Technology" (2003 to 2007) supported by the Ministry of Internal Affairs and Communications are included in this achievement.)

[Inquires regarding this issue]

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