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Press Release

T-Engine Forum
YRP Ubiquitous Networking Laboratory

[Press Release]

Electronic Medicine Record Book

Automatically checks the combinations of medicines, medicine and food and whether such combinations cause any allergies.

The YRP Ubiquitous Networking Laboratory (Shinagawa, Tokyo, Director: Ken Sakamura), the Sakamura Laboratory at the Interfaculty Initiative in Information Studies, the University of Tokyo (Bunkyo, Tokyo, Professor: Ken Sakamura) and the Sawada Laboratory at the Graduate School of Pharmaceutical Sciences, the University of Tokyo (Bunkyo, Tokyo, Professor: Yasufumi Sawada) have jointly developed systems that automatically check the combinations of medicines and warns that a certain combination of medicines causes any allergies against an electronically saved medicine history and allergy history of patients. By using tamper-resistant IC cards and e-TRON cards, high-level security is realized for medicine record books, which were conventionally used by each pharmacist separately.

Recently, a wide variety of medicines has been developed but since there are so many types. And many have similar names. The problem is that even if they have similar names, the ingredients are completely different, and taking an incorrect combination of medicine may lead to serious accidents. In addition, because of the recent high concern for health, a lot of healthy foods have been developed and since some of them contain additional ingredients other than the main ingredients, experts have pointed out that certain combinations of health foods may cause accidents. Therefore, technology that prevents potential errors when medicines are prescribed or taken is required.

In the proposed systems, automatic medicine identification was realized by using ISO 15693 passive RFID tags with anti-collision capability. The Systems automatically check combinations of medicines by simultaneously identifying multiple types of medicines. Also, the use of eTRON (YRP Ubiquitous Networking Laboratory and the University of Tokyo) in electronic medicine history books has been realized. eTRON is a security architecture for the era of ubiquitous computing and high-level security has been realized by using tamper-resistant security chips. The problematic combinations of medicines are identified by

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checking the medicines against the personal medical history and allergy history of a patient saved in a chip. Storing personal information in a security chip prevents the leakage of individual information to third parties.

In these systems, a medicine database is accessed and the contents of an electronic medicine history book are checked against the data, then problematic combinations of medicines are instantly identified to provide appropriate advice to the patient. Thus, accidents caused by errors when medicine is prescribed or accidents due to a bad combination of medicine and general food or health food taken at home can be prevented.

(The research results of “Secure Ubiquitous Computing Platforms” (2005 to 2007) supported by the Ministry of Education, Culture, Sports, Science and Technology, are included in this achievement.)

[Inquires regarding this issue]

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Photograph 1

Electronic Medicine Record Book

Photograph 2

Automatic Medicine Identification System