FOR IMMEDIATE RELEASE

Masquerade detection technology for IC card access control systems using face recognition

- Quick authentication irrespective of ageing or changes in environmental conditions -

Tokyo, Japan, 4th July 2011 – Hitachi, Ltd. (NYSE: HIT/TSE: 6501, hereafter, Hitachi), and Hitachi Information & Communication Engineering, Ltd., today announced the development of masquerade detection technology for IC card access control systems based on face recognition of images recorded on each entry/exit.

The access control system using this technology collates the facial images of a person entering or leaving a restricted area in a face recognition data base for future reference. Accordingly, the system does not require updating to accommodate changes over time. Further, by employing high-speed similarity-based image search technology(*) which can process 10 million images in 1 second, an individual can be identified in real-time using a extremely large volume of recorded images.

In recent years, an increasing number of companies are introducing access control systems as a security measure against information leaks and unauthorized entry. As IC card systems carry the issue of card-loss and unauthorized card-lending, a system which also includes face recognition to counter masquerading is drawing attention. Conventional systems using face recognition technology identify an individual based on possession of the IC card and a face-match based on a comparison with pre-registered facial images of the individual taken from various angles. This type of system, however, requires regular updates of the registered images in order to accommodate for ageing. Further, high accuracy identification can be achieved using larger number of registered images, however, it also requires longer search time and thus real-time matching was an issue.

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To address these issues, Hitachi, Ltd. and Hitachi Information & Communication Engineering, Ltd. developed a masquerade detection technology with enhanced usability by registering an individual's facial image each time a person enters or exits a restricted area, and applying high-speed similarity-based image search technology. Details of the technology are described below.

(1) Use of facial image taken every time a person enters or exits a room

A method which images and records several facial images each time a user enters or exits a room, and uses these images for matching, was developed. In addition to continuously adding the most up-to-date image, matching is based on numerous recorded images including those taken from different angles and lighting conditions.

(2) Achieving smooth personal identification with high-speed similarity-based image search technology and numerous facial images

Face recognition and matching is conducted on facial images photographed sequentially prior to reading the IC card; using the images as the search image (key image). By applying high-speed similarity-based image search technology which can retrieve similar images from 10 million images in 1 second, a search of numerous registered images using several search key images is possible.

Notes:

* High-speed similarity-based image search technology: Technology which automatically extracts characteristic features of an image such as color and shapes and converts the information into high dimension numerical information to conduct a search of similar images.

About Hitachi, Ltd.

Hitachi, Ltd., (NYSE: HIT / TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 360,000 employees worldwide. Fiscal 2010 (ended March 31, 2011) consolidated revenues totaled 9,315 billion yen ($112.2 billion). Hitachi will focus more than ever on the Social Innovation Business, which includes information and telecommunication systems, power systems, environmental, industrial and transportation systems, and social and urban systems, as well as the sophisticated materials and key devices that support them. For more information on Hitachi, please visit the company's website at http://www.hitachi.com.

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