NEC demonstrates Terahertz camera for effective fire scene imaging

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NEC Corporation, in cooperation with The University of Tokyo and the National Institute of Information and Communications Technology, announced today the successful demonstration of terahertz wave image measurement technologies that deliver superior results at fire scenes to conventional image measurement technologies that use visible light or infrared.

The demonstration was carried out using NEC and NICT's jointly developed "high sensitivity real-time uncooled terahertz camera," featuring terahertz wave image measurement technologies that enabled successful imaging through clouds of black smoke at a simulated fire scene.

These results were realized through "Commissioned Research and Development for Advanced Communication and Broadcasting Research and Development," sponsored by the NICT.

Terahertz waves are electromagnetic waves situated between infrared waves and radio waves. Terahertz waves are helping to drive the advancement of technological research for measurement and communications as they can be transmitted through paper, plastic and smoke. Specifically, terahertz image measurement is attracting attention as a next-generation non-destructive testing technology that is considered to be safer than X-rays.

There is a constant demand for image technologies that enable rescue

workers to penetrate the black smoke that engulfs fire scenes and allows them to visually understand their surroundings. Terahertz wave technologies are believed to meet this need, but their effectiveness in a fire scene has been difficult for conventional technologies to verify due to the terahertz wave's tendency to be easily absorbed by the atmosphere.

In April 2008, NEC developed a high sensitivity bolometer type uncooled two-dimensional terahertz array sensor. Since then, the company has developed a high sensitivity real-time uncooled terahertz camera and continued activities for improving the sensitivity of the array sensor.

Looking forward, NEC will continue to promote the development and commercialization of terahertz image measurement devices and to contribute to the fields of nondestructive inspection, medical treatment, drug development and illicit object detection.

NEC will exhibit the new terahertz camera at SECURITY SHOW 2011 at Tokyo Big Sight from March 8-11.

Source: NEC Corporation