NEC Develops Speech-to-Speech Translation Software for Mobile Phones

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NEC Corporation today announced that it has succeeded in the development of Japanese-English/English-Japanese, automatic speech translation software for single-chip multi-core processors for small devices such as mobile phones, capable of operation at high speeds with low power consumption.

NEC verified the high-speed automatic speech translation processing capability of this software on NEC Electronics' MP211 application processor for mobile phones, at an operating frequency of 200MHz, proving that operation of interpretation applications is technologically feasible on small devices like mobile phones.

Supporting a 50,000-word rich vocabulary, this software realizes automatic speech-to-speech interpretation of travel conversation through the development of a new parallel speech recognition method for single-chip processors with several CPU cores, and a compact, lexical-rule-based, machine translation engine that unites dictionaries with grammar that is operable on small devices.

The features of this software include:

(1) A parallel, large-vocabulary, continuous speech recognition engine, which is built with a database consisting of a wide-range of conversation sounds and words that enables accurate speech recognition of spoken words.

(2) A lexical-rule-based, machine translation engine, which achieves high-performance translation of spoken words utilizing dictionaries/grammar, compiled from a wide range of language knowledge data.

(3) An advanced wave-concatenative speech synthesis engine, which realizes high-performance reading through an advanced, wave-concatenative speech synthesis method based on a wide-range of speech data.

(4) A total integration module that controls collaborative operation of the speech recognition engine, the machine translation engine, and the speech synthesis engine realizing automatic translation on a single processor for mobile phones.

With the advancement of an information society and increased freedom of movement across borders, the dynamic development of technology supporting automatic speech interpretation and translation to support communication between different languages is rapidly progressing.

Source: NEC