

Talking in digital tongues

What do the phrases "recognising speech" and "wrecking a nice beach" have in common? Nothing, is the obvious answer. Yet both phrases are acoustically identical. So how can a smart computer (which can hear and speak) spot the difference?

Computer researchers involved in speech translation technology face this question every day. But they are making progress, as an experiment is designed to show this week in Munich.

It will link three sites in the US, Germany and Japan by telephone and allow conversations to be simultaneously translated by using speech synthesisers, computers and digital telephone signals.

Conversations cannot carry more than 600 pre-defined words and must be continuous and flawless. But the system is speaker-independent - it can recognise any voice, regardless of intonation and accent.

"Within the last year or so, such technology has become less of a utopian dream. We are moving into practical uses," says Alexander Waibel, a professor at Germany's Karlsruhe University who, with colleagues from Carnegie Mellon University in the US and the Advanced Telecommunications Research Institute International of Japan, is conducting the experiment.

The results stem from a decade of research in which other companies have also been active. AT&T, the US telephone group, presented at last year's Seville World Fair a system which translates some 200 words but remains speaker-dependent. Nippon Electric Corporation also funds such research.

Recent progress in the field has attracted the interest of Germany's Siemens, which partially funds Karlsruhe's work. But most funds are from the state. The German government is spending DM13m (£5.3m) annually over eight years. ATR enjoys funding from Japan's Post and Telecommunication Ministry.

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