AT&T

News Release

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AT&T to Build Parallel Processor

Whippany, NJ -- AT&T has been awarded a contract from the
Defense Advanced Research Projects Agency (DARPA) to
develop prototypes of a computer that can recognize
speech and images and do other complex pattern-matching
tasks in a fraction of the time of today's best
computers.

"These machines should bring us an important step
closer to systems that can recognize large-vocabulary
human speech as fast as it is spoken, a goal that has
eluded computers up till now," said Robert Lewine, head
of the Special Systems Design Department at AT&T Bell
Laboratories.

The AT&T machines will be parallel-processing
computers, considered by many to be the next wave in
high-speed computing. Parallel-processing computers
harness numerous small processors to divide and conquer a
problem, executing many operations in parallel rather
than one at a time.

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The contract is worth about $7.7 million to AT&T over a three-year period. It was awarded under the Strategic Computing Initiative, an ambitious Pentagon program that is funding research into several new computer technologies. Scientists at AT&T Bell Laboratories, where the work will take place, expect to have the first working prototype ready by next spring.

AT&T's subcontractor on the project will be Fifth Generation Computer Corporation of New York City. Salvatore Stolfo, Fifth Generation's chief scientist and an associate professor at Columbia University, has conceived a parallel-processor architecture, called Dado, that will be the basis of the AT&T machines.

AT&T will extend the Dado architecture to speech and image recognition and to other tasks involving sophisticated signal processing. AT&T will also develop software to control the computer. "We plan to demonstrate that this new architecture can compute solutions to other problems that are currently considered too complex for today's computers," said Lewine.

"Our major challenge is to understand how to partition a problem into hundreds or thousands of small pieces so that the multiple processing elements can be used with high efficiency," said Allen Gorin, the principal investigator on the Bell Laboratories project. "We already know how to do this for speech recognition," he said, "and are extending our studies to many other areas of signal processing."

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