

ARTIFICIAL DEVELOPMENT TO BUILD WORLD'S BIGGEST SPIKING NEURAL NETWORK

CCortex Will Rank among the World's Fastest Computers

PALO ALTO, Calif.—Sept. 12, 2003--Artificial Development, Inc. today announced that it has completed assembly of the first functional portion of a prototype of CCortex™, a 20-billion neuron emulation of the human cortex, which it will use to build a next-generation artificial intelligence system. Artificial Development will initiate testing of CCortex in October.

The cluster being assembled at AD.com Data Center is a high-performance, parallel supercomputer, composed of 500 nodes and one thousand processors, 1.5 terabytes of RAM, and 80 terabytes of storage.

The low-cost software/hardware system runs on Linux, Intel and AMD processors. When all sections are assembled, CCortex is expected to reach a theoretical peak performance of 4,800 Gflops, making it one of the top 20 fastest computers in the world. The cluster will be used as a test bed for beta versions of CCortex.

CCortex is a massive spiking neuron network emulation and will mimic the human cortex, the outer layer of gray matter at the cerebral hemispheres, largely responsible for higher brain functions. The emulation covers up to 20 billion layered neurons and 2 trillion 8-bit connections.

"Our new neural network is several orders of magnitude larger than any of today's research efforts," said Marcos Guillen, Artificial Development CEO.

How CCortex Works: A Spike-Friendly Neural Network

Most neural network models to date have been based on the Hebbian network, a simplified version of the real neural networks based exclusively on connectivity properties between neurons. CCortex adds to classical Hebbian connections a time-sensitive, analog representation of the shape of "spikes," the pulsing patterns that enable neuron populations to communicate with each other. This allows CCortex to tune vast populations of neurons and the information they hold to complex spiking patterns, adding a much higher level of complexity to a highly realistic simulation.

The CCortex software emulation applies its Spiking Neuron Software Engine to a database that has a representation of the layered distribution of neural nets and detailed interconnections in the brain. The data closely emulates specialized regions of the human cortex, corpus callosum, anterior commissure, amygdale and hippocampus. The emulation aims to actualize the estate of each neuron and its connections several times per second, maintaining a myriad of competing spiking patterns, while providing feedback and limited interaction with simplified versions of other nervous and sensory systems.

About Artificial Development

Mountain View, Calif.-based Artificial Development was founded by Founder, President and CEO Marcos Guillen in July 2003. A privately-held company, Artificial Development is comprised of an international, multidisciplinary team of computer programmers, mathematicians, and computer infrastructure professionals who are working to introduce the world's first true AI. The company's technology, CCortex™ is a complete emulation of the human cortex and peripheral systems. Artificial Development plans to deliver a wide range of commercial products based on CCortex to enhance business relationships globally. For more information, please visit www.ad.com.