

Friday November 18 2005

Intel supercomputer could bring AIDS vaccine for SA a step closer

New machine cuts years off laborious process of analysing every facet of the deadly disease

Lesley Stones

Information Technology Editor

SCIENTISTS in SA working to develop a vaccine to prevent HIV/AIDS are hoping for a boost from a \$1m supercomputer being donated by technology firm Intel.

Experts from a variety of disciplines will be able to run intensive research projects on the supercomputer, cutting years off the process of analysing every facet of the deadly disease to pin down a cure.

The donation was announced yesterday by Intel chairman Craig Barrett during a visit to SA. Barrett said the computer would play an important role in speeding up important steps that SA was

already taking to curb the spread of diseases and develop cures.

Winston Hide, director of the South African National Bioinformatics Institute, said the computer's intense processing power should cut the time to market for an HIV vaccine dramatically.

"This is a machine for innovation and any medics, bioinformatics, health researchers or molecular researchers who have a good idea will be able to use it," Hide said.

"We have a very big problem with HIV. With a death rate of between 600 and 1 000 a day, we need to apply all types of technologies to the problem.

"One is high-performance computing, so we can investigate

all the proteins and genes in the virus and in the human genome, and look at every piece of DNA."

That was a mammoth task, and the supercomputer would help the scientists investigate HIV at a deep level of detail to help develop a vaccine, he said.

The Intel machine will be based at the Meraka Institute in Pretoria, a government-funded centre for advanced technology research.

Currently, the institute and others are forced to conduct much of their research by borrowing time on high-powered computer systems around the world. With SA's slow and expensive bandwidth that often involves downloading data onto

DVDs and posting them.

Having a local supercomputer would make an enormous difference, said Hide.

"South Africans are very good at coming up with powerful locally applicable ideas, and by applying high-performance computing power we will be able to take steps forward in developing a vaccine for HIV.

"By improving our computing facilities we will be able to ask the kind of questions we haven't been able to ask before."

His only fear is that researchers scattered across the country will struggle to access the computer in Pretoria because of their slow and costly bandwidth.

"We have such poor internet

connectivity that there's no way any real research can be performed so we are only in the first step of providing a solution," Hide said.

For the computer to be accessible, government had to make a high-bandwidth infrastructure available to the Meraka Institute, he said.

The only existing supercomputer in SA is a Cray computer, which is designed to work on specific problems and is not very easy to use, said Hide.

The computer was donated to the institute in 2002 to conduct research into why some Africans are immune to HIV and to improve the understanding of malaria and tuberculosis.

