

CSIRO software commercialised

By Simon Grose

A new commercialisation deal between CSIRO and an Australian company aims to make a small dent in Australia's IT trade deficit while showing a middle way between proprietary and open-source models.

Two software products — DYMEX and CLIMEX — developed by researchers at CSIRO Entomology and now brought to market by Hearne Scientific Software, can model the population dynamics of any plant or animal species.

Previous versions have gained at least 240 customers in 32 countries, and they dominate their specialist niche market.

"These programs are unique; there are no competitive products," Hearne's Elizabeth Molina said last week.

DYMEX allows rapid model construction for users with no computer programming skills who want to explore the impact of changing conditions and control strategies on target species. CLIMEX predicts the potential distribution and relative abundance of species in response to possible changes in climate and climate variability.

An example is an assessment of how a disease of rice, rice blast, would perform if it were introduced accidentally into Australia. CLIMEX was used to compare the climate of the rice-growing Deniliquin region with foreign regions where rice blast occurs. Most locations where climates matched that of Deniliquin were within the distribution range of rice blast, indicating high potential for establishment of the disease. A DYMEX model run for 1988-1999

with meteorological data for four locations in the Australian rice-growing region found that the number of years favourable for the disease ranged from two at Griffith to nine at Yanco.

Another example is a DYMEX model used to predict the seasonal population trends of cattle ticks in Uganda. It showed that local cattle had developed strong resistance to tick infestation and that extensive dipping programs could put the endemic stability of tick-borne diseases at risk.

Brisbane researchers at CSIRO Entomology, Dr Bob Sutherst and Gunter Maywald, began developing the programs in the mid-1980s for internal use but demand from other researchers drew them into the market. They were distributed directly by CSIRO Entomology until the early 90s, when CSIRO Publishing took over the marketing. In the new deal, Melbourne's Hearne has entered an agreement to distribute new versions of the products commercially.

"We are a research organisation and we don't want to be involved with the mechanics of software development, maintenance, distribution or sale," Dr Sutherst said last week.

"Those are the complementary skills that Hearne has, so we see ourselves as just driving the research and developing new algorithms for interpreting ecological problems."

Elizabeth Molina said customers who paid for continuing maintenance and support of the products would be able to access a "bureau service" where they could share models provided by other users and

contribute their own for non-commercial use.

This Open-Source/Creative Commons approach builds on the development process. The Rural Industries Research and Development Corporation funded a collaborative network exercise for researchers who were applying DYMEX and CLIMEX and developing models and extensions suitable to their particular areas of research.

Dr Sutherst calls it a "semi-Linux-type model".

"The team as a whole then had ownership of the product and were able to contribute their various different sets of data to it," he said.

"It was very powerful. It allowed people for the first time to get an over-all picture of what was going on."

CSIRO retained copyright over the software. Models built by users — usually for particular species, groups of species, or geographical regions — were owned by the users, who could decide whether to protect them or make them available as open source.

Access to the model-sharing bureau site was provided to customers who paid a continuing maintenance fee and agree not to use the information provided for commercial gain.

CLIMEX 2.0 and DYMEX 2.0 will be launched officially at Cebit Australia in Sydney next month. They are priced at \$1500 each for a single-user licence, \$2500 for both, and multiple-user licences are available.

www.publish.csiro.au/paper/
www.hearne.com.au/cgi-bin/index.cgi