

THE INDEPENDENT Saturday 11 February 1989
Superfast computer created

A REVOLUTIONARY form of supercomputer which can carry out trillions of instructions every second has been developed by Ivor Catt, a British scientist, Mary Fagan writes.

The computer is able to do in hours jobs which would take months on existing American supercomputers. It is based on a novel technology, wafer scale integration (WSI). At its heart are wafers of silicon measuring six inches across, and holding around 500 individual "zones", each effectively a separate chip containing around one million components.

Putting many wafers together would make a computer capable of executing many millions of tasks in parallel. This could be ideal for systems monitoring air

traffic in Europe, devoting a separate processing unit to each square mile of air space, or for simulating and forecasting weather.

Mr Catt originally developed the idea of wafer scale integration in the early 1970s. Sir Clive Sinclair eventually embraced Mr. Catt's original ideas, and helped set up a company, Anamartic, to exploit them into making computer memory chips with huge storage capacities.

Next week, Anamartic and Fujitsu, the computer giant, are expected to announce that they have perfected these memory chips.

Mr Catt is trying to raise £5m to build a prototype of his Kernel Logic Machine.

ELECTRONICS WEEKLY, January 11th 1989

In 1973 British inventor Ivor Catt came up with a clever way of hooking chips together on a wafer using software. In 1984 a team of researchers, including Catt, started work on the technology at Sir Clive Sinclair's now defunct Metalab. Anamartic was formed in 1986. Meanwhile US start-up Trilogy, founded by Gene Amdahl, collapsed after spending \$300m on wafer scale integration. Anamartic developed a prototype using a prototype using STC chip technology in mid-1986. Next month the company will unveil a device built from leading-edge chip technology.

It is expected to start shipping a 2.4 byte computer memory by the end of the year.

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The Kernel Logic Machine

Cost-effective array of a million computers is ideally suited to Europe's air traffic control problem, weather forecasting, and a host of hitherto impossible tasks/applications.

THE TIMES THURSDAY FEBRUARY 9 1989

A first for UK

A British inventor has described a breakthrough in electronic technology that may lead to a new generation of supercomputers capable of carrying out a million million operations a second, at a fraction of the cost of today's machines.

Conventional supercomputers, widely used for such complex problems as weather prediction, solve problems by feeding in data bit by bit,

and processing each part in turn. But the enormous number of microprocessors and memory chips they need makes them very expensive.

Ivor Catt, an independent electronics consultant, has found a way in which cheaper, mass produced components can be used to build such machines. Built from large "arrays" consisting of a million processing units,

computers could solve many problems simultaneously.

Catt says that calculation speeds a hundred times higher than today's fastest supercomputers could be possible on machines costing a few million pounds.

Details of the breakthrough, a development of his pioneering microelectronics work, will appear in the March issue

of Electronics and Wireless World.

At an international conference later this month, Anamartic, a Cambridge-based electronics company, will announce that it has used Catt's ideas to achieve so-called wafer scale integration. It allows faulty components to be left on the thin slab, or "wafer", of silicon on which they are formed, greatly cutting manufacturing costs.

Robert Matthews

THE SUNDAY EXPRESS February 12 1989

By MICHAEL TOWERS

Air safety superbrain

A BRITISH scientist has beaten the world in inventing a supercomputer which could solve the world's air traffic control problems.

Ivor Catt claims that just four of the machines, based in London, Barcelona, Milan and Frankfurt and costing £12 million could safely supervise Europe's crowded air lanes.

The new computer can execute one trillion instructions every second.

Mr Catt, 53, an engineering graduate of Trinity College, Cambridge, said last night: "If it gets financial support it could be in place and running in four years".

"Hundreds of millions of pounds are

lost by air companies every year because control is inadequate".

Mr Catt is now urgently seeking £5 million backing so he can build the first model.

Fellow inventor Sir Clive Sinclair said: "I do think Ivor's computer could control air traffic."

Meanwhile travel trouble for summer holidaymakers loomed today after Britain's air traffic controllers threatened industrial action.

They want urgent talks on safety with Transport Secretary Paul Channon over plans to halve the training period.

THE CFD DREAM COMES TRUE!

(But Will You Be Left Behind?)

You always needed a million
computers...

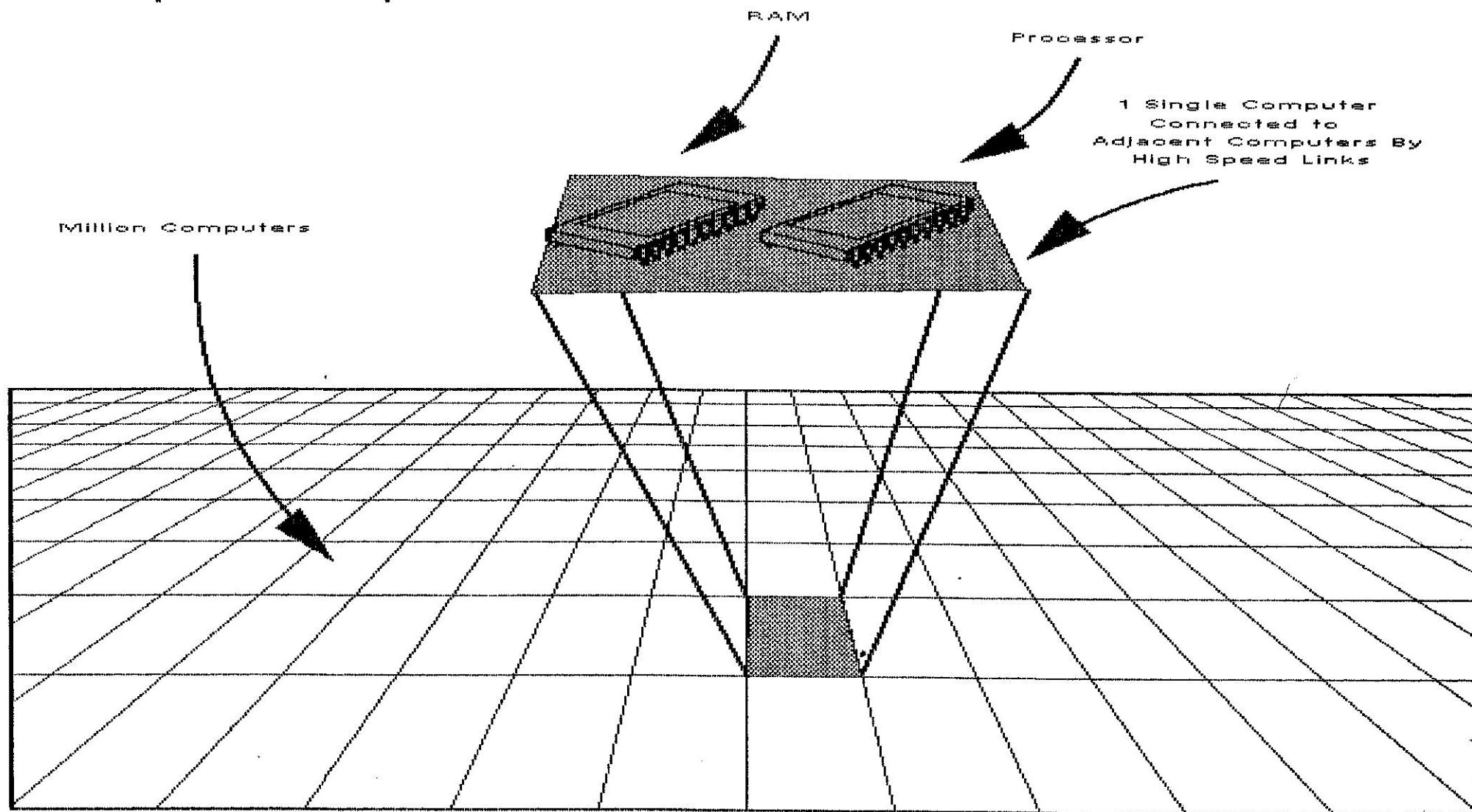
Now at last you have them, for only
£500,000

Read about the Kernel Array Processor

Galea (New Scientist, 12 Nov. 1988)
finds that all the larger problems call for
a 2D array of one million computers.
Kernel meets the need.

The Kernel Array Processor

- A Simple Description



Only if you specify the need. This array processor, currently being designed by Anamartic Ltd, can still be modified to include your special needs.

Please talk to Ivor Catt today, or phone 0727 864257 with your comments.

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For the
Defence Science Seminar
Computational Continuum Dynamics
At Cranfield Institute of Technology
3-5th July 1990