
**FORTH MACHINES
WORKING GROUP REPORT**

Chairman, Alan Winfield
Secretary, Robert Dixon

Attendees:

J. Abbott, R. Adams, D. Angel, L. Atkinson, J. Brakefield, J. Calderon, A. Cotterman, R. Davis, L. Forsley, J. Garst, J. Hart, G. Haydon, M. Kristo, R. Lee, C. Moore, M. Pandolf, M. Perry, D. Pountain, P. Reynolds, J. Rible, R. Rusick, M. Schulte, S. Schultz, W. Smith, L. Szasz, J. Ward

The interests of the Group were summarized by the chair as:

1. The architecture of Forth machines and design constraints that need to be satisfied in successful implementations.
2. The problems that can be solved by the new generation of Forth machines.
3. The long-term implications of the existence of these machines and their children.

The question was raised:

Are these machines solutions waiting for a problem?

A discussion was held concerning what problems they would and would not solve.

Charles Moore said they were not fast enough to handle RF problems but could contribute to video animation so long as the resolution was not too high. Color, of course, complicates the problems, particularly for image analysis problems.

Alan Winfield gave an example of a Forth Machine being used to analyze 512x512 pictures to detect faulty cookies. He also suggested that these high-speed, small machines could replace many hardwired controllers.

John Hart's machine is emulating several languages, and the general question of the need for processing other languages such as C was discussed.

Indeed, the success with which this can be done may determine the market share of these machines. Charles

Moore projected that 10mH Forth machines could execute FORTRAN at about the same speed as an 1108. (\$5000 vs. \$1,000,000 cost comparison.)

The question is:

Must we go to the potential users or let them come to us? (Is it enough to do things faster and better.)

Charles Moore said we surely need high volume as they need to sell 100,000 NOVIX chips to reach the breakeven point.

There was, of course, no consensus on the answer.

There was a consensus that processors of the type presented at this conference are the wave of the future. The stack architecture is simpler and superior to the current register machines and the planned RISC machines of register type. The Forth methodology carries over successfully to the hardware.