DATA ACQUISTIONS AND REAL-TIME SYSTEMS WORKING GROUP REPORT

Chairman, Carol Pruitt
Secretary, Wing Ng

Attendees:

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Because the group represented the entire data-acquisition/real-time spectrum, no single topic seemed appropriate for discussion. Samples of the topics discussed follow.

One member was locked into using an Apple Macintosh for high-speed data collection. He had found that the Mac's operating system uses such a high percentage of the bus cycles, that only about half the necessary transfer rate was possible. The group was sympathetic but unable to think of a workable solution.

The use of circuit diagrams to spec process-control systems is seen to be a holdover from their use by the electrical engineers who formerly designed all-hardware systems for process control. Traditional software techniques such as block diagrams are more appropriate now, except perhaps when electrical engineers or technicians are the intended audience.

The typical Forth system's round-robin multitasking is actually more reliable in practice than in theory. Problems can arise, however, with carelessly written application routines that don't PAUSE in the right places, or with extremely time-dependent applications (where a clock-interrupt routine may serve better than a task).

Consensus was that, while we had worthwhile things to discuss, the group as constituted was too general, and that more specific topics would encourage a more interesting discussion. Possible topics are scientific data acquisition, industrial process control, and multitasking algorithms other than round-robin.