

SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

DISTRIBUTED INTERACTIVE COMPUTING NOTE 813

VMEBUS Seminar Report

Issued by
Jeff Smith, R27

2 March 1983

DISTRIBUTION: R W Witty
K Robinson
C Prosser
P J Smith

1. Introduction:

The seminar lasted from 9:30 to 4:30 and was very popular - over 300 people attended, showing that there is a large interest in this bus. The meeting split into two sections - an overview of the bus itself, followed by presentations from several vendors. Two of the speakers were foreign and it was not always easy to figure out what they were talking about. Nevertheless, the seminar was informative and worthwhile. It underlined the fact that the VMEBUS is supported by several competing manufacturers, growing fast in popularity and is oriented towards the Motorola 68000 processor.

2. The VMEBUS:

The VMEBUS is a non-multiplexed parallel asynchronous bus, with control signals oriented to the MC68000 series of 16/32 bit microprocessors. The board format is single or double eurocard, with a female backplane (connection is via plug and socket rather than edge-connector). There are two connectors, each with 96 pins, labeled the P1 and P2 connectors. Only P1 is used on the single eurocard format, and it is this connector that carries the control signals, 24 address lines and 16 data lines. Expansion of both address and data to 32 lines is possible using the P2 connector, which also contains additional power and ground lines. The P2 connector can be used in a variety of ways. Thomson even showed a system which used the P2 connector to carry a completely separate bus structure (the G64 bus). The bus is oriented toward cheap (eg. TTL rather than say ECL) technology. There are some address modifiers for future expansion, or for use with devices that do not do memory-mapped i/o. They reckoned that 5Mbytes/sec was a reasonable data transfer rate to expect the bus to support, but you could probably get it to go faster. Their excuse for the small card format was that it reduces vulnerability to vibration, and that this is important in helicopters. The bus supports an optional block transfer mode for moving large amounts of contiguous data by supplying the starting address to a slave device, followed by multiple data transfers.

3. Product Presentations:

Five vendors gave presentations - Motorola, BICC, Mostek, Mullard and Thomson EFCIS. The Motorola one was given by Gordon Stubberfield - the only useful fact to emerge was that their East Kilbride plant has finally managed to manufacture a 68000; the others were more informative, talking mostly about their 68000 systems based on the bus. The handouts have been filed with the SUSSG 68000 systems survey literature. BICC dealt with packaging, PCB's and backplanes; the others talked about board and system-level products. Mostek, Thomson and Mullard were all anxious to give the impression of being interested in UNIX - Mostek are currently having UNISOFT port UNIX 3.0 to their hardware. Motorola are 'close to releasing version 4 of VERSAdos' !! There were also stands operated by distributors such as Lock, Celdis, Crellon, VSI etc.