bit RAMs. Key efforts also come from STC, GEC, and Plessey in the UK; Thomson; and SGS in Italy. A UK company, Inmos, has produced a most interesting VLSI component, called the transputer. Apart from pioneering some novel design methods, now seen in Racal’s Isis design workstation, Inmos has developed a parallel processing language called Occam for transputer systems and for synthesis of silicon circuits.

A recent start-up called ES2 European Silicon Structures is one of the first companies with the goal of operating across Europe as a high-technology, low-volume direct-write E-beam silicon foundry.

Computers

The mainframe computer industry is represented by Bull, ICL, and Siemens. Bull is strongly linked to Honeywell technology and code. ICL designs the only mainframes with a non-US order code and markets them in approximately 60 countries. Siemens manufactures IBM compatibles.

Olivetti and Nixdorf are rapidly expanding in the office and medium size systems markets. Together with Philips, the major innovations in design automation come from these companies, with a strong push for advanced technology.

There is also a growing tendency in many divisions of all these computer manufacturers to design local versions of their products using advanced Japanese technology. A number of these Japanese collaborations have proved effective. ICL’s 3900 Level 80 mainframe, for example, uses the Fujitsu cube.

**CAD**

The well-known logic simulator, Hilo, was developed at Brunel University in the UK. It has reached the US through GenRad. There is also a lot of interest in hardware description languages. Dacapo of Dortmund University, FRG, and Ella of RSRE in the UK are excellent examples of products that could be technically superior to VHDL but are probably destined for a small role in light of the US DoD push.

**CONCLUSION**

As you can see, there is no shortage of activities to report on. My only regret is that we don’t have more room to print all the articles submitted. Even my introduction is sketchy, but its purpose was merely to provide a glimpse into the busy world that is design and test in Europe.

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