Computing communications

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New Generation Computing: An International Journal on Fifth Generation Computers.
Editor-in-chief T. Moto-oka.
Springer-Verlag. 4/yr. DM 250, $96.
Integration: The VLSI Journal. Editor-in-chief L. Spaanenburg.
North-Holland. 4/yr. Dfl. 250.
Technology and Science of Informatics. Editor-in-chief Bertrand Meyer.
North Oxford Academic, 242 Banbury Road, Oxford OX2 7DR, UK. 6/yr. £60, $96.

THE conventional computer designs established by Alan Turing and John von Neumann have begun to encounter numerous difficulties; most particularly, low software productivity and insufficient processing power on non-numerical data have led to the so-called "software crisis". In response, promising new ways of thinking about computation have emerged at the intersection of hardware and software studies. One result has been VLSI (Very Large Scale Integration), a semiconductor technology which makes possible the fabrication of electronic circuits having hundreds of thousands of transistors on an area the size of a fingernail. On the software side, it is becoming increasingly appreciated that the mathematical properties of functional and relational programming languages (such as Prolog) are suitable for specifying logical inferences and computations in an inherently parallel fashion. Such parallelism promises to make effective use of the host of computing elements provided by VLSI technology.

These interconnected technical issues, taken together with planned applications in natural language processing and knowledge engineering, constitute the new generation of computing, and a journal sympathetic to these aims seems sure to be well received. *New Generation Computing* (NGC) shows every sign of fulfilling its potential as the forum for researchers in this area. The need for a new journal is well justified, not least because of the appalling publication delay in most computer science journals. Credit is due to the Institute for New Generation Computing in Japan for instigating this journal, and for showing from the start a concern for technical and scientific issues.

All of the papers appearing in NGC are in English, but while most of them have thus far originated from Japanese researchers I predict that representation will become more widespread as the field matures. The publisher has done a fine job of packaging and presentation, although in some articles the standard of English (an unfamiliar language to many contributors) leaves much to be desired, requiring considerable imagination on the part of the reader — greater editorial intervention seems to be called for in this regard. Similarly the scientific standard of the papers is somewhat patchy, although this will undoubtedly improve in the future. Each issue of the journal contains about eight papers, many of them short notes of some six pages in length, and there is usually an editorial and a non-technical "leading article" of a more general nature. The journal needs to do some growing up, but my overall impression is that NGC will prove to be indispensable to those who need to be kept informed of developments as the fifth generation approaches.

Integration: The VLSI Journal is a natural partner to NGC. The title *Integration* is an appropriate if unintended *double entendre*, for the coverage of this journal is of interest to the mathematician and computer scientist as well as the electrical engineer. Editorial policy stresses the mutual benefit of communication between these practitioners, and this is a very healthy sentiment which I hope propagates more widely to industry. Certainly, *Integration* will be a valuable addition to the literature serving the computer scientist and engineer.

The papers published in the journal rise to the challenge laid down by the editors and are of high standard. Like NGC, *Integration* has an admirably short publication delay, and also includes a number of departments — letters to the editor, news and a calendar of events, and abstracts of a dozen or so relevant papers published elsewhere. Quality of illustrations is important in reports of VLSI work, and monochrome photographs and half-tones are reproduced to a high standard. As yet, no colour plates are in evidence, however, and no advice on submitting coloured photographs is given, but colour does not seem to be out of the question because both the cover and one advertisement sport the appropriate hues.

Compared with *Integration*, *Technology and Science of Informatics* (TSI) has a wide coverage and is intended to appeal to the more general audience of computer professionals. The journal is a cover-to-cover translation of the French publication, *Technique et Science Informatiques*, and classifies its papers under the three headings "Surveys", "Applications" and "Research". Each paper is introduced by a few paragraphs of commentary by a member of the editorial board. In addition, there are plenty of photographs and line drawings, and there is a relatively large departmental section with correspondence, reviews, bulletins and calendar. The four or five papers appearing in each issue are not dated, giving no obvious clue to publication delay.

It would be natural to find a French emphasis here and, indeed, most of the

reviews are of books written in French and the format is identical to that of the parent journal. The publishers have clearly gone to some trouble to translate the papers well, though there is the occasional bloomer; in one article on Unix, for example, the phrase "branching catalogue" should have been rendered "tree-structured directory".

The advantage of TSI is that it offers a direct line to the French computing community, and it will meet the needs of those especially interested in knowing what is happening across the Channel. □

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Standard reading

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Computers and Standards.
Editor-in-chief John L. Berg.
North-Holland. 4/yr. Dfl. 262.
Interfaces in Computing.
Editors R.W. Dobinson and P.N. Clout.
Elsevier Sequoia. 4/yr. SwFr. 195, $92.75.

THE advent of *Computers and Standards* (CS) reflects a growing awareness of the need for standards within the computing industry. Unlike most journals in the general area of computing, CS is not limited to one topic such as programming or computer architecture. Rather, it addresses standardization, which affects virtually all aspects of computing. Indeed there is an increasing number of branches of the subject in which the only effective way forward is through the standards process.

Most of the information in CS appears in the form of papers and commentaries; why some contributions are classified as papers and others as commentaries is not clear — to me at least. The quality of the material is, generally, very high, which is only to be expected as many of the authors are well-known and very active in standardization work. Recent issues have contained contributions on the programming language