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# Workstations, UNIX and CSIRONET

Peter Heweston

Controller, User Services, DCR Canberra

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As announced in the August issue of *CSIRONET News*, the Division of Computing Research has embarked upon a joint development project with Office Automation Pty Ltd to develop a CSIRONET workstation based on the micronode.

Details of the workstation hardware must remain confidential at this stage, under the terms of the agreement with Office Automation. However, the general outline is as follows:

- The workstation will be based on the current CSIRONET micronode, and will fit in the same box.
- The workstation will contain the micronode board and at least one other board with the workstation CPU, which will be another Motorola M68000.
- The system will have an in-built 5 ¼-inch Winchester disk, probably somewhere in the 20-60 Mb capacity range.
- The system will run the UNIX operating system.

From the user's perspective, the selection of UNIX as the workstation operating system is probably the most significant aspect of the whole project. UNIX is the Bell Laboratories system which started on DEC equipment and rapidly spread to the rest of the 16-bit world. Originally Bell Labs maintained a rather prohibitive licensing policy, with licenses costing over \$20,000. Recently they have changed their approach to UNIX, and binary licences now cost only a few hundred dollars. The result has been that UNIX has become the de-facto standard for 16- and 32-bit systems.

UNIX has much to commend it in the workstation environment. It has an elegant hierarchical file system, and powerful tools to operate upon it. It supports multitasking easily and naturally, so a user may have several processes executing simultaneously. UNIX has spawned a powerful assortment of software tools, particularly in the areas of text manipulation and program development, and most of these are issued as part of the UNIX system release.

DCR is currently examining UNIX software products with a view to selecting an assortment of packages to enhance the functionality of the basic system. The proposed packages would include:

- Standard UNIX text processing tools, including NROFF and TROFF which format and typeset documents, EQN which typesets mathematical equations, TABLE for formatting tabular data, SPELL and TYPO for spelling correction, etc.

- Text editors, both line oriented and full screen.
- Word processing facilities.
- A database management system, probably relational.
- A spreadsheet program of the Visicalc type.
- Programming languages, including C, Fortran 77, Pascal etc.
- Some statistical software.

The installation of UNIX on the workstation is being done in conjunction with SIROMATH, who are licensees for UNIX in Australia. The particular version of UNIX is Berkley 4.2, which supports virtual memory. The complete UNIX software tools will be available, including programs such as GREP, LEX, AWK, YACC, DIFF, MAKE, etc (for those to whom these curious names have meaning!).

The (somewhat belated) introduction of UNIX onto CSIRONET represents a major development. UNIX is already the dominant operating system on 16-bit microcomputers, and it is making steady inroads into the larger machines. Versions of UNIX are available for VAX and IBM compatibles, and even the CRAY 2 will run it. It is by no means unthinkable that in a year or so CSIRONET users will be able to use the same operating system on their local workstation and on a major CSIRONET host. Roll on the day! ■

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## Darwin Office Opens

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By the time this issue of *CSIRONET News* is distributed, there will be a new DCR Regional Office, located in Darwin. Rob Hurle left the Network Operations Section in late November to set up the new Office and is the first Officer-in-Charge. The new Regional Office will provide support for existing CSIRONET users in the Northern Territory, and a contact point to attract new business. There are already two nodes in Darwin – the main DCR node (DW\*) at the CSIRO Research Laboratories, and a dependent node (DI\*) at the Department of Education and Youth Affairs.

The new Regional Office is located in the CSIRO building in McMillan's Road, Berrimah, and the telephone number is (089) 843611. ■