selection and a software bus to simplify the development of integrated application systems. The implementation of these features and more will be discussed during this session.

Session No:309
Room:MIDDEN ZAAL
Time:14:30-15:30
SIG:GENERAL INTEREST

COMPUTER GRAPHICS ON THE PRO
Chairman:P.Sawyer
University of Bath
U.K.

14:30-15:30

COMPUTER GRAPHICS ON THE PRO
J. Lucey
Digital Equipment Corp.
U.S.A.

This session will survey the graphics hardware of the Professional 300 series computers and the available graphics software, including GIDIS, CGL, ReGIS, NAPLPS.

Session No:310
Room:MIDDEN ZAAL
Time:16:00-17:00
SIG:GENERAL INTEREST

THE PROFESSIONAL 350 IN A LABORATORY
Chairman:P.Sawyer
University of Bath
U.K.

16:00-16:45

THE PROFESSIONAL 350 IN A LABORATORY
B. Hunter
Digital Equipment Corp.
U.S.A.

Capabilities of the PRO350, of specific interest to laboratory users, have increased significantly over the past 12 months. The session will provide a comprehensive summary of R/T capabilities of an electronic laboratory notebook and a variety of other related tools.

16:45-17:00

APPLICATION OF THE PROFESSIONAL PC 350 IN A UNIVERSITY DEPARTMENT
M.B.Katan
Agricultural University
Department of Human Nutrition
The Netherlands

Ours is an University Department with a staff of about 60. Before the advent of Digital PC's, we used computers for statistical processing of data from epidemiological and experimental research (DECsystem 10) and for laboratory data reduction (HP85 and Spectra Physics 4100), and we felt a need to go into word processing and office automation. We acquired a PC350 (512 kb RAM, 10 Mb disk) to see how it performed at various tasks. This abstract describes our first six months of experience.

The word processing programme DATATEXT is highly professional and sophisticated. Although the number of options proved somewhat overwhelming for first-time computer users, introduction of our secretaries to word processing went fairly well. However, certain features of the built-in DBMS do not function, and the LQP02 printer plus sheetfeeder causes trivial but irritating problems with certain word processing applications.

Statistical Package for the Social Sciences (SPSS) is available in a PRO version. It performs satisfactorily; with pairwise deletion, core allowed for 600 cases for "non-parametric correlation" and 1765 for "scattergram", procedures took a few minutes at most. The printer output is acceptable. However, SPSS-PRO is based on SPSS release 8 to 9 and lacks certain sophisticated procedures of SPSS-X.

Biomedical Data Package (BMDP) is not available under P/OS. However, the RSX version of BMDP (disk-overlaid) ran glitch-free and reasonably fast; e.g. a BMDP4F log-linear model used 9.5 min, compared with 40 sec CPU on a DEC10. A core-overlaid version will probably be a lot faster. Again printer output was problem-free.

Initial tests of the spreadsheet SUPERCOMP20 were disappointing: when the full 1000 rows are used, processing becomes excruciatingly slow.

The Fortran77 compiler is essentially RSX. Benchmark tests were satisfactory: filling an array with 20,000 elements took 0.70 sec CPU (as opposed to 0.10 on the DECsystem 10), and creation on hard disk of 1000 records of 128 characters took 56 sec (cf. 3 sec CPU on DEC10).

We are now acquiring two more Pro 350's, one mainly for program development and one for statistical analyses. Although P/OS software is almost non-existent the Pro 350 runs most or all RSX11 programs, making it an attractive machine in a DEC-oriented environment.

Session No:311
Room:MIDDEN ZAAL
Time:17:00-18:00
SIG:GENERAL INTEREST

PRO APPLICATION DEVELOPMENT
Chairman:G.F.Ruffini
CIS Piemonte
Italy

17:00-18:00

PRO/APPLICATION DEVELOPMENT
J. Lucey
Digital Equipment Corp.
U.S.A.

This session deals with tips and techniques for application development under P/OS. The focus is on developing applications from high-level languages, such as FORTRAN, BASIC-PLUS-TWO, components of P/OS interact and considerations around building clusterable libraries will be included.

Session No:312
Room:GLAZEN ZAAL
Time:08:45-10:30
SIG:VAX

VAX USER PAPERS PART III
Chairman:W.Gericke
Fraunhofer Institut
Germany

08:45-09:15

SPARSE MATRIX METHODS ON THE VAX 11/780
R.J.Rimmer
La Trobe University
Australia

We compare the performance on a VAX 11/780 of a package which operates only on the nontrivial items in a data set (and so is called a sparse code) with the performances of two full codes, which operate on every data element. The data sets employed were three randomly generated arrays, and the arrays which arose during the solution of large economic models. Results for this paper were gathered while testing the feasibility of using the VAX to solve the ORANI model of the Australian economy, which includes 90'000 nonzero data entries in its structure. As part of our tests a reduced version of ORANI was solved. This involved application of the sparse code to an array containing 38'000 nontrivial elements, while the full codes operated on 75'000 items. Two conclusions can be drawn from our tests:

1) for randomly generated data, full codes may perform better than sparse codes; and

2) execution times for the three codes operating on the economic models indicate that the sparse code is faster.

One of the full codes was also run on a CYBER 76 to solve the ORANI model. Our experience suggests that larger models can be solved on the VAX than on the CYBER, but this aging machine is able to execute our tests 17 times faster. The larger version of ORANI has been implemented on a VAX which can easily accomodate the large data set.

09:15-09:45

DWARF: THE DWINGELOO-WESTERBORK ASTRONOMICAL REDUCTION FACILITY
J.P.Hamaker
Radio Observatory
The Netherlands