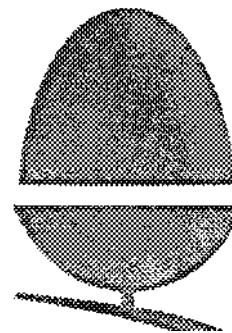# Developers' Newsletter
No. 22
May 1991

General Information

O Developers' Registration Scheme

The revised Developers' Registration Scheme has proved very popular. Over 200 Developers have signed up and RISC OS Style Guides have been sent out to all whose subscriptions have been received. We intend to hold software forums in the summer to which you will be invited.

A few Developers were invited to become Key Developers and their inaugural meeting was held at the end of April. We have already had several requests from other Developers who would like to be considered for Key Developer status. These requests will be given serious consideration. We were keen to start with a small group, and to learn with and from that group, but there is no reason why the group should not expand a little in the future, as appropriate.O

Address change

As mentioned in Newsletter No 21, the Technical Support team is now situated at our Fulbourn Road offices. The address is as follows:

> **Acorn Computers Ltd**
> **Developer Support**
> **Fulbourn Road**
> **Cherry Hinton**
> **Cambridge**
> **CB1 4JN**

The new direct telephone line for Registered Developers is:
> 0223 215474

Please do not give this number to anyone else. The general number for Fulbourn Road is still 0223 245200. Faxes should be sent to 0223 210685 at Fulbourn Road. 0

New VAT prices

A list of the Developers' Discount Scheme prices is enclosed. This list shows the discounted prices with the new 17.5% VAT added. A Retail Price List is also enclosed.

Please remember to include payment with your orders and send them to Developer Support NOT direct to the Sales department.

There is no separate carriage charge.

O Developers' Special Offer

We are aware that many Developers would like the opportunity to have larger memory machines for their development work. We have decided, therefore, to offer a special package, to Registered Developers only, subject to availability, for the month of June.

The package consists of:
A 4MB machine fitted with RISC OS, MEMCla and a 50MB Rodime hard disc

with the following free software and documentation:
C Release 3
Assembler
Software Developer's Toolbox
RISC OS Programmer's Reference Manual

The price is £1099 exc VAT.

If you wish to order a monitor, you must do so at the same time. Monitors cannot be supplied separately. The price of the monitor is as on the Developers' Discount Price List enclosed. We will also provide C 3.1B separately, if requested.

All orders must be submitted, cheque with order *as* usual, on the special form enclosed with this newsletter and must be received before the end of June.

Please allow 28 days for delivery.

The level of response to this offer will help us to assess the need for further, similar offers in the future.

O Archimedes 540 and Acorn R260 workstations

Delivery of both of these products to Acorn has increased progressively and has now enabled us to clear the order backlog. If you wish to order through the developer scheme, we should now be able to deliver virtually from stock.

O Archimedes 500 Series and Acorn 200 Series Technical Reference Manual

This manual, AKJ76, has just gone into stock and is an invaluable reference for those developers needing to know more about the hardware details of both series of machines. See Developers' Discount Price List for the discounted price.

O Level 4 Fileserver and Broadcast Loader

The Level 4 Fileserver is now available and has been added to the Developers' Discount Price List. The Broadcast Loader is soon to be available (expected in the warehouse for Quarter 3) and will also be added to the Discount Price List.

()SCSI

SCSI cards are temporarily out of stock. This reflects the
- change from the AKA30 SCSI card to AKA31 as fitted in Archimedes 540 and R260.

We continue to receive a number of queries relating to the Acorn SCSI card. Some of these relate to the use of the card with devices which do not conform fully with the SCSI specification or with device groups which are not supported fully by the card. Please note that there is only limited software support for removable media, tape streamers and optical drives. If you intend to use the card with a device other than a Common Command Set (CCS) hard disc, please bear this in mind or seek our advice. We are unable to accept SCSI card returns unless the unit is actually faulty.

The use of SyQuest removable media hard discs is becoming increasingly popular with Archimedes computer users. There are some known problems when these devices are used with the Acorn SCSI card. We hope to be able to give you advice shortly on how to minimise any problems. We understand that later versions of the S yQuest drive ROMs can assist in this respect.

O RISC OS compliance

Sam Wauchope, Acorn's Managing Director, has asked me to pass on to you that the message he has received, loud and clear, from Education Authorities he has visited is that they are looking for RISC OS compliance in applications software. Where there is competition between two packages, the one that is more closely RISC OS compliant will win the orders. 'Learn-it-once' is the order of the day.

The great opportunity that the RISC OS GUI provides, in addition to uniformity of interface between different applications, is the ability to provide an intuitive interface that requires the minimum of learning time in using any new application. The target should always be the ideal that the user can get going usefully without using the manual at all, and that the manual is a reference to more sophisticated use.

We regularly come across applications that are unecessarily complex or confusing for the typical user. Menu strings may use unfamiliar words or jargon, there may be too much choice at particular levels of menu, reasonable defaults may not be set or known etc. The application may simply operate in a different way from most others. Far too often it is obvious that the programmer familiar with the technical features has

designed the user interface without the balancing input of the naive user.

Please, wherever possible and prior to release, present your program to a naive user without the manual or with just the first few pages and note the success or failure of the exercise. If the user fails to progress, it is not necessarily that he or she is lacking in understanding, but more probably that the programmer has failed to understand the needs of the user. This may all sound obvious but, as with any skill, it is difficult to remember how confusing everything seemed when it was new to you. The uninitiated user is an invaluable tester of our computer-literate assumptions.

We believe we have the best platforms and operating systems for our markets. You have the skills and commitment to provide the best applications products. The opportunity that remains for both of us is to deliver systems that do not demand computer literacy from our customers.

0 RISC OS Style Guide

Now that you have received your copy of the RISC OS Style Guide, please remember to send any comments you may have to Ian Sewell here at the Fulbourn Road address. The Guide is not intended to be entirely static and we would welcome your comments for the next edition.

O Binary Distribution Agreements

Please note that a Binary Distribution Agreement gives a licence for the distribution of the software/code described in the agreement and in the form described therein. The licence does not normally allow for the code or software to be split up or altered. There have been several instances lately where we have noted that items have been separated. CLib and the other shared resources, for instance, should only be supplied in a !System directory and with !Sysmerge. Similarly, 65Host, from the BBC B Emulator, should be distributed in its entirety

If you have a specific need to supply things in a different manner from that directly covered by the licence agreement, please contact us.

O Training Courses

- **Training Opportunities**

In the software industry, training is becoming recognised as an integral part of product support as well as a potential source of additional revenue.

Most software houses receive requests from customers for some form of product training. The obstacle to meeting this need is often that small companies have neither the facilities nor the resources to organise and run viable training sessions.

Opportunities now exist for software houses to utilise Acorn facilities and to work with Acorn in providing application training for their customers. If you would like to discuss this possibility please contact Garry Neale at the Acorn Training Centre, Unit 5, 645 Newmarket Road, Cambridge, CB5 8PB, Tel: 0223 214411 Fax: 0223 414517.

• Something for Software Developers

The C programming language is firmly established as the leading language for professional software development. It is the most versatile modern eomputer language for applications in all fields, and as a result is also increasingly in demand for computer training and education.

Further support for software development is now available in the form of a new series of training courses which have been developed in consultation with application programmers. The courses have been designed for flexibility, and will appeal to commercial programmers as well as to those who are developing software in education and training establishments.

- *Programmers' Introduction to* C *(IC/ 2)*

This two-day course is designed for those who have little or no experience of C but have programmed in other languages. Topics covered include structured programming, variable declarations, types, function definitions, structures and unions, pointers and indirection, extern and static variables, code modularity and header files.

- *Introduction to RISC OS Application Programming (IR/ 2)*

A further two-day course looking at the structure of RISC OS applications and the use of the C Release 3 RISC OS library functions. Applicants should have a working knowledge of C or should attend IC/2 beforehand.

- ***Advanced RISC OS Application Programming (lA/ 1)***

An intensive treatment of selected RISC OS topics in depth. The content will be tailored to the needs of individuals attending, who will normally be expected to have attended IR/2. The maximum number of delegates will be strictly limited.

For forthcoming dates contact Val Raworth at the Acorn Training Centre (address as above).

Marketing Information

0 Consumer Business Unit

• Software Marketing Pack

The Consumer Business Unit has produced a pack of information for Developers working on products for the consumer, leisure, entertainment and games markets. The pack covers marketing as well as explaining that Technical Support can be obtained by becoming a Registered Developer. If you would like a copy of the pack, please contaet Simon Lovesey at the Fulbourn Road **address.**

• Product Directory

Work is now complete on the second edition of the Education Product Directory. Work has already started on a Directory for the Value Added market. Directories for the Consumer market (leisure, entertainment, games, home organisation products etc.) and of all produets for RISC OS and RISC iX related hardware will follow.

If you have products to be included in any of the above directories, please complete a form for each product and return the forms (enclosed) to me as soon as possible (by 21 June at the latest) and supply a library copy of each software application paek if you have not already done so.

Please also tell us, using the enclosed forms, if any product details have changed, if you have not already done so.

• Ac0rn User Show

This year's Acorn User Show promises to be bigger and better than last year's. There is a new venue - The Wembley Conference Centre in London and the date is better placed for customers looking at purchasing gifts for Christmas. The dates are 11, 12 and 13 October.

0 Special Needs

• Forthc0ming **Special Needs-targetted** A3000 Pr0duet

Acorn will be launching the BBC A3000 Special Access computer at the end of May at the NAIDEX exhibition.

It will be offered with an optional monitor and stand, will come fitted with Acorn serial and 3rd party user/analogue expansion and include a disc of public domain utility software.

The utilities provided will be:
!Chars - single character entry by mouse click
!BigPointr - a big mouse pointer
!Flasher - Flashing Caret and Caret Locator
!Closeup - Magnifying Window
!BigScreen and !ScreenViewer - Large Mode Utilities
!SpecialKb - Mouse Emulator using numeric pad
!ASP (Archimedes Switch Program) - Software making RISCOS desktop accessible to switch users

If you would like a copy of the disk of utilities, in order to try your software/peripherals with them before the product is launched, please contact Rachel Connie on 0223 215474 after 30 May.

O Education Business Unit

• Access I.T.

The Acorn ACCESS I.T. Conference for 1991 takes place between Friday 5 July and Saturday 6 July at the East Midlands Conference Centre (Jesse Boot Centre), Nottingham University.

The conference offers:

♦ *Training sessions in the use of Archimedes and A3000 software and Acorn computer and network equipment in schools.*

• *A wide **range** of **sessions on the most popular Archimedes packages used by schools and on newly-released educational software packages.***

♦ ***Practical experience of setting up, managing and maintaining Econet and Ethernet networks.***

• *An exhibition by over 30 educational software producers.*

If you would like more details, please contact the Access I. T. Conference Administrator, Aeorn Computers Ltd, Fulbourn Road, Cherry Hinton, Cambridge, CB1 4JN (Tel: 0223 245200)

0 International Business Unit

International activities continue to develop. In Germany, considerable progress has been made, and there are, at the time of writing, three distributors delivering product to a total of 42 dealers so far (including some in the former East Germany!). Considerable coverage has been achieved in the German press, and a full program of reviews is planned for the rest of the year. In addition, Unix products are available and supported in Germany.

The CeBit exhibition in Hannover in March was very successful for Acorn, and helped to substantiate our position as a serious supplier in the market. It must be stressed, however, that this is not an easy marketplace to develop: it remains, though, Europe's largest by any measure, and the opportunities there are real. It is not, on the other hand, a question of instant success; some patience and persistence is clearly necessary in the beginning. As the machine-base increases, so does the need for properly " Germanised" software and, similarly, the opportunities for Developers and Suppliers of applications.

We are planning a number of events for the rest of 1991 which will be of interest to those of you who see potential for your products in Germany, and we will be approaching you in the near future to discuss this. In the meantime, please give us a ring with any ideas, comments, questions etc which you may have. Oliver Obel mans our "German Desk" here, and he can be reached on 0223 215414.

Technical Information

0 SWI PDriver DeclareFont (&80155)

Aeorn has introdueed a new SWI that applications software can use which enables an application to define the fonts it wishes to have available in the printer for a particular print job. Future versions of Printer Drivers and other RISC OS modules can be expected to support this SWI as relevant. If an application has the the error "S WI not known" returned, then it should carry on as for the current RISC OS 2.00 environment.

in: r0 = handle of font to be declared, =0 then r1 -> name

rl -> name of font to be declared.

r2 = flags

bit 0 set => don't substitute if not present, otherwise do.

bit 1 set => when font is used kerning will be applied

out: V clear => all preserved.
V set => error occurred in download, r0 -> error block.

This call will attempt to download a font to the current printer deviee. The SWI allows the specification of a font handle or font name to be mapped to the device. For each device the handling of this will be different. For instance, a PostScript device will attempt to locate a file containing the Typel or Type3 version (or convert it) and download it to the printer stream whereas a LaserJet may attempt to create a bitmap copy of the font to be used or simply ignore the request.

The SWI should be used after a PDriver_SelectJob but before the page drawing has started. This allows for PostScript devices to ensure that the structuring is correct.

The application should only declare fonts that are going to be used in this print job. If it did otherwise, then the result could be that the entire fonts directory would be converted to PostScript compatible fonts and then downloaded to the device, creating an over-large prologue file and thus slowing the printing process.

0 Module Names

Please note that sometimes updated modules are sent to you with names indicating their version number e.g. Fonts244 and FPE280. You should rename these modules before using them (in these cases to Fonts and FPEmulator). You may only distribute them (or any Acorn code) under the terms of a binary distribution agreement. Please apply, in writing, for such a licence if you require one and allow a reasonable time for the legal procedures to be followed.

O CLib 3.66 availability

CLib 3.66 is now available for use by end-users who may

discs and from software provided by Developers who have the necessary agreement to ship System, Sysmerge and CLib 3.66 with their products.

0 !Chars - later version

There is now a later released version of !Chars - version 0.16 (as supplied with the BBC A3000 Special Access system described earlier).

0 Discs for utilities

Many of you are still providing insufficient discs when requesting a range of utilities etc. CLib 3.66, Release 2 printer drivers and printer driver sources, for instance each need a separate disc. It speeds up our response if you can provide sufficient dises.

0 Filetypes

We have been concerned for some time now at the high rate of allocation of RISC OS filetypes to developers and - the way in which they are sometimes used.

The file dragging/double-clieking paradigm used in RISC OS is one of its great strengths enabling the system to intelligently react to these simple user "commands". By establishing, as far as possible, a small range of standard file types that developers use widely, information can be shared between applications and the advantages to the user of multi-tasking increase.

We eontinue to be asked to allocate new filetypes for applications in areas already covered by pre-existing allocations. In some cases the developer may not be aware of an existing filetype or may just want something slightly different. We also receive applications for multiple filetypes within one application; only the key export or launch files should need these filetypes.

We appreciate that Acorn needs to provide more guidance in this area and help establish and maintain documentation of popular filetypes. Shortly, we will form a small committee of developers, chaired by a developer, to bring about standardisation. The objectives will inelude the definition of existing recommended standard filetypes (including third party allocations) and guidance to developers for the future in areas where there is currently a multiplicty of types. If you are particularly interested in contributing to this subject please contact Ian Sewell as *as* soon as possible.

0 Requesting allocations

Various names and numbers that appear in RISC OS must be centrally allocated by Acorn to ensure that they don't clash.

The normal procedure is for Developers to apply to Acorn for an allocation, and for certain header files to be updated to reflect this.

When requesting allocations, please ensure that you give all the necessary information. It delays our response when we have to request further details from you. All allocation requests should be in writing. The information required is as follows:

- ♦ **SWI chunks**

    1. Class   system extension (device drivers, low level functionality)

        application (high level applications)

    2. Proposed prefix

    3. Brief description of product

- ♦ **WIMP message blocks**

SWI ehunks are also allocated for WIMP message blocks in the applieations area.

- ♦ *Error bases*

&100 errors are alloeated on a per manufacturer basis. You should use errors from the error base allocated for all your products until the allocation is exhausted.

- ♦ *Manufacturer's number*

Company name

Manufacturers' numbers are allocated to companies making expansion cards.

- ♦ *Podule Identifiers*

    1. Company name

    2. Brief description

    3. Expansion card name

- ♦ *Filetypes*

A form is available for filetype allocation requests.

See note above regarding the need to control filetype variety.

- ♦ *Filing Systems*

    1. Name of filing system i.e. *as* for ADFS:, NET: etc.

    2. Name to be used to select the filing system

Each filing system is alloeated a block of &100 errors as a consequence of being allocated a filing system number. The base of this block is &0001nn00 where nn is the hexadecimal value of the filing system number, e.g. SCSIFS is 26 which is &1A so SCSIFS is allowed errors in the range &00011A00 to &00011AFF.

It is becoming increasingly apparent that the flexibility of RISC OS in handling multiple filing systems could become confusing to an end-user if confronted with a new filing system for every new device installed. This is made worse if the look-and-feel of each is slightly different.

We would encourage the use of additional device drivers within existing filing systems wherever possible. An example could be IDE hard disc drives where filing

system allocation requests have been received. Device drivers under ADFS could be preferable to an "IDE" filing system. In some cases the owner of the filing system, Acorn in the case of ADFS/Filecore, may need to *ass in* the seamless addition of the new device driver to the existing filing system. Should we all have done this for SCSI, for example, and used ADFS as a basis for the filing system? Would it have satisfied the need? Your views on the overall subject would be welcome. Please send them to Ian Sewell at Fulbourn Road.

- ♦ *CMOS RAM*

CMOS RAM will not be allocated for expansion eards. You are expected to use the 4 bytes already allocated with each Podule Identifier.

CMOS RAM is in very short supply, therefore you should expect to be restrieted to the maximum allocation of one byte. For applications and tools, look at storing the configuration in the application direetory - see !PrinterDM, !Mailman and !Alarm on the RISC OS Applications Discs.

- ♦ *DrawFile tagged object IDs* 'Name' of

tagged object (i.e. very brief and descriptive)

Full description (its composition, what it does etc.) of the type of tagged object for which you require the identifier.

- ♦ *Module names*

Module titles must not elash, sinee only one module of a given name can be loaded at once!

Please register module names, in writing, with Acorn via Developer Support.

- ♦ *Application names*

Application directories are called, for example, "!foo", and the Filer uses the sprites "!foo" and "sm!foo" from the Wimp's sprite pool to display the directory icon. For this reason, application names must not clash.

Please register application names, in writing, with Acorn via Developer Support.

- ♦ *Environment variables*

Most applieations use at least one environment variable (e.g. "foo$dir") to gain access to their internal resource files. However, other environment variables such as "foo$path" may well be useful, so once an application name "foo" has been registered, all environment variables of the form " foo$*" may be used.

Modules may also use environment variables of the form " modulename$*", so application and module names must not clash (unless the module uses no environment variables).

- ♦ *Shared resources*

The recommended approach is to create an application directory whose !Boot file sets up an environment variable which other applications which know about it can use to access the shared resources (within the shared resource directory).

!System is an example of such a shared resource, which provides shared resources for the RISC OS Applications Disc programs. Note that other applications may rely on using !System resources, BUT further resources from third parties MUST NOT be put into !System. These should instead go into their own shared resource directories, with names obtained by applying to Acorn.

This approach ensures that users can view shared resources as fixed objects that must be present for other applications to work, and not have to worry about what is inside them.

Where upgrades of a partieular shared resouree are concerned, the old copy should be archived and deleted from view, to avoid the possibility of accidental aeeess to the old information. Note that if this does occur, the resulting error messages should make it clear to the user what he should do next.

- ♦ **commands*

These can be supported by modules, transient utilities or Alias$ variables. In all of these cases, they must be registered.

- ♦ *Sprite names*

This only applies to sprites going into the Wimp's pool (using *IconSprites), and not those held in applications' own sprite areas. The 'system sprite pool' should not be used by desktop applications.

- ♦ *Font names*

All Acorn font names should conform to:

    <fontname>.<weight>.<optional style>

The weight element can only be omitted if there is no style element either, e.g. for a Symbol font.

Users may have fonts provided from several sources. It is important, therefore, that font names do not clash, since if they do, only one version of the font can be accessed.

Font names for all fonts mapping onto LaserWriter fonts (i.e. having the same metries and general appearanee) have been pre~allocated, to allow Acorn to produce a version of !PrinterPS that already knows the correct font name mappings.

These names are: •
Churchill.Medium.Italic ZapfChancery-Mediumltalic
Clare.Medium   AvantGarde-Book Clare.
Medium.Oblique AvantGarde-BookOblique
Clare.Demi   AvantGarde-Demi
Clare.Demi.Oblique   AvantGarde-DemiOblique
Corpus.Medium   Courier Corpus.
Medium.Oblique Courier-Oblique
Corpus.Bold   Courier-Bold
Corpus.Bold.Oblique   Courier-BoldOblique
Homerton.Medium   Helvetica Homerton.
Medium.ObliqueHelvetica-Oblique
Homerton.Bold   Helvetica-Bold
Homerton.Bold.Oblique Helvetica-BoldOblique
NewHall.Medium   NewCenturySchlbk-Roman
NewHall.Medium.Italic NewCenturySchlbk-Italic

NewHall.Bold	NewCenturySchlbk-Bold
NewHall.Bold.Italic	NewCenturySchlbk-BoldItalic
Pembroke.Medium	Palatino-Roman
Pembroke.Medium.Italic	Palatino-Italic
Pembroke.Bold	Palatino-Bold
Pembroke.Bold.Italic	Palatino-BoldItalie
Robinson.Light	Bookman-Light
Robinson.Light.Italic	Bookman-LightItalic
Robinson.Demi	Bookman-Demi
Robinson.Demi.Italic	Bookman-DemiItalic
Selwyn	ZapfDingbats
Sidney	Symbol
Trinity.Medium	Times-Roman
Trinity.Medium.Italic	Times-Italic
Trinity.Bold	Times-Bold
Trinity.Bold.Italic	Times-BoldItalic

We have a program called !FontConv that can convert AFM (Adobe Format Metrics) files into IntMetrics files, to ensure that the correct metrics are used.

♦ *Device numbers*

A new message protocol has been devised to allow different programs to take over control of various devices. For example, before taking control of the serial port baud rate selection, a terminal emulator would issue Message_DeviceClaim to check that another emulator was not already controlling the serial port.

Each device is identified by a major and minor device number, as documented in doc.DevClaim - if further devices are to be added to the list, their numbers must be allocated by Acorn.

♦ *Printer driver **numbers***

Each "PDriver" module used by the !PrinterXX

applications has a unique "printer number" assigned to it, to allow programs that know about particular printer types to take special action under some circumstances.

This only applies to people writing their own printer driver modules - Acorn can make the current printer driver source code available to you if required.

Please apply for allocations ON A **SEPARATE SHEET from all other communications as the request has to be passed on** for allocation and **a clear request will facilitate this.**

Also, if you do require allocations, please ask for them as soon as is reasonably possible. Developers asking for allocations at the last minute are often inconvenienced when these cannot be made immediately. The requirement for allocations should normally be part of the overall specification for a new product and most requests could therefore be made at the outset.

Also included with this newsletter is a separate sheet repeating the information above so that you may copy it to your programmers/developers.

O Software Hints and Tips

• **Opening windows without polling the wimp**

It is possible to open windows without polling the wimp. This may be useful for title windows which are displayed as an application starts up, and is the method used by the wimp itself for generating error boxes. You must however have initialised your program as a task using Wimp_Initialise prior to this. The short piece of code below illustrates this method.

```
... Load templates ...
SYS"Wimp_CreateWindow",,q% TO handle%
!q%=handle%
SYS"Wimp_GetWindowState",,q% SYS"
Wimp_OpenWindow",q% SYS"
Wimp_RedrawWindow",,q% TO more% WHILE
more%:SYS"Wimp_GetRectangle",,q% TO more%:
ENDWHILE
```

Messages from companies outside Acorn

The information below is provided in good faith at the request of the organisations concerned. The provision of the information implies no particular approval or recommendation by Acorn.

• N C E T

NCET have asked us to let you know that their

"Technical Bulletin of Resources for Data Capture in Science Education" is currently being printed and should be mailed to relevant Developers within the next few weeks. This platform-independent standard (referred to as SID), for data capture within schools, was distributed as a draft for comment to some of you some time ago. If you do not receive a copy from NCET within a few weeks and feel it is relevant to your development activities, then please contact

> Angela McFarlane
> Homerton College
> Hills Road
> Cambridge

• LAAN **Services**

LAAN Software Services Ltd has become one of the UK's leading suppliers and distributors of duplication equipment. They provide hardware for many leading corporations and the world's leading software publishers.

Their second main area of activity is software documentation. They provide this in all forms, with services including technical writing and language translation along with printing, binders, slipcases and many others. Packaging and distribution services are also available.

LAAN Software Services Ltd has the flexibility to meet all requirements from a full package to any single aspect of it. They offer support to the computer industry in these specialist areas, offering solutions for large or small projects. Confidentiality and security are always paramount. The address of LAAN Software Services Ltd is as follows:

Bydand Lane Industrial Estate
Little Paxton
Huntingdon
 Cambridgeshire
PE19 4ES

Tel: 0480 407700
Fax: 0480 407411

• **Bradford Technology Ltd**

Bradford Technology Ltd is able to offer translation and translation-related software services for the Dutch market. They can be contacted at the following address:

Ripley Street
Bradford
BD5 7RR

 Tel: 0274 726155
Fax: 0274 391928

Enclosures
Retail price list
Developers' discount price list
Product directory form and notes
Allocations
Developers' Special Offer Order Form

Every effort has been made to ensure that the information in this newsletter is true and correct at the time of printing. Products described in this newsletter, however, are subject to continuous development and improvements and Acorn Computers Ltd and other contributors reserve the right to change their specifications at any time. Acorn Computers Ltd cannot accept liability for any loss or damage arising from the use of any information or particulars in this newsletter.

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