

Developers' Newsletter

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Acorn 

General News

1994 subscriptions and Registered Developer Agreements

Developers are reminded that subscriptions fall due in January. You (with the exception of those Developers who have joined the scheme since 1 September 1993) will be invoiced for £180 plus VAT in the New Year. Please let us know as soon as you can if, for any reason, you will not be renewing your subscription. We will assume that any Developer whose subscription is still outstanding on 1 April 1994 does not wish to retain Registered Developer status.

In addition, from 1994, we will be asking all Developers seeking registration to enter into an agreement with Acorn which will be ratified on Acorn's acceptance of the applicant as a Registered Developer. Existing Registered Developers will also be asked to sign an agreement which will be forwarded to them in the New Year.

3D Desktop

You will now all have had time, no doubt, to investigate the !NewLook software included on the disc with your copy of the RISC OS 3 Style Guide.

Whereas Acorn has made NewLook freely available (at Acorn World, for instance), it is important to remember that it is NOT public domain. Acorn retains the copyright and does not permit NewLook to be distributed except in its entirety.

Please make sure, if you have not already done so, that your software products run if NewLook is loaded. It is for the user to choose, if he has NewLook, whether or not he loads it.

You may have noticed variations on the 3D theme with scalable fonts etc. Please note that any such variations are purely developmental code which is **not and should not be made public**. Such developments are not expected to be offered to customers with existing products.

RISC OS 3 upgrades

You may like to be aware of how many customers have RISC OS 3.1 as opposed to RISC OS 2.

The latest figures, based on RISC OS 3.1 computer sales and upgrade kit sales, indicate that just over 50% of the Archimedes series computers sold to date are fitted with RISC OS 3.1.

A small additional number of A5000 owners still have RISC OS 3.00 (perhaps 1% of the overall installed-base of 32-bit computers).

If one considers only active Archimedes computer users, it is reasonable to assume that the figure for those using RISC OS 3.1 would be higher than 50%.

AKF50 monitor

At the Acorn World Show, Acorn launched a new high-resolution SVGA monitor which supports not only VGA

and SVGA VESA standards but also all current Acorn screen modes. The monitor, which has a nominal screen size of 14 inches and is manufactured in the UK, has a 0.28 dot pitch tube and anti-glare surface treatment on the screen. The horizontal frequency is 15-38kHz and the vertical 45-90kHz. Developers wishing to order AKF50 instead of the monitors offered in the systems on the Developers' Discount Price List should contact Developer Support for the price.

Games on TV

For some time we have been placing games on the major TV programmes such as Games Master; Bad Influence; Movies, Games and Videos and Ben the Boffin on Big Breakfast. For some Games programmes, however, there is a very long lead time and we need to provide them with demonstration versions that can be used at least two months before release. In addition, at the same time we also need to provide them with film (Beta format). If you are producing leisure software which can be used please let Alastair France (0223 254215) know early. There is a good chance that we can tie PR into your product launches as long as we know early enough.

Multimedia products and the Press

We are having increasing success getting products looked at by the PC press. In Chris Cain's latest articles in PCW he has discovered that Acorn products are good at Multimedia! His request is for anyone developing Multimedia applications for the Acorn range to contact him.

Chris Cain's telephone number is: 071 439 4242

Barcodes

Acorn are now selling actively into the retail market, and some Developers are starting to benefit from this. While the obvious benefits apply to games writers, other products are relevant. The demands of this market are rather different from selling via mail order and the following points should be borne in mind:

Packaging

The packaging should be visually attractive as well as protecting the product. At a minimum, video style cases are sufficient, although a card box either a plain box with a sleeve or a dedicated box which is better. CD cases are not especially attractive and are particularly prone to cracking which is very unattractive. Remember that the packaging should be attractive both from the front and from the side - and should say, in both cases, what the product is.

Barcoding

Many retailers use barcodes for their point-of-sale devices. Many will not stock product that is not barcoded. The EAN barcode is an international standard adopted by the Article Numbering Association in Britain. In order to use EAN barcodes in retailing a company must apply for a manufacturer number to the Article Numbering Association, 11 Kingsway, London WC2B 6XF.

A RISC OS application to produce barcodes as drawfiles (!Barcodes) is available - for information contact Kell Gatherer, Location Works, 1 Charlotte Street, London W1P 1HD (Fax 071 637 2727).

In addition, having a barcode means that it is possible for

the package to appear on the Gallup charts - see below...

Chart entry

Gallup, who produce software charts for the industry, and in particular CTW (which is aimed principally at independent computer resellers in the leisure end of the market), are happy to produce Acorn-specific charts if the amount of data that they receive on Acorn software sales is sufficiently high. Their returns come from multiples as well as from a number of independent resellers, and are obtained directly from the store's POS system (multiples) or from a portable scanner (independents). Both rely on two things - having barcodes present and Gallup being aware of the availability of the product. The best way of ensuring that Gallup know of your barcoded products is to send either a copy of the packaging or a complete product (whichever is the simpler for you) to Dorian Bloch, Gallup, 307 Finchley Road, London NW3 6EH.

Email addresses

As more and more Developers are gaining uucp email access, email becomes an increasingly popular means of communication with Developer Support. To remind you, the address to which Developers should send email is:

ISVQuery@acorn.co.uk

If you are on email and have not already informed us of your email address, please could you send it? At the same time, it would be helpful if you could indicate whether the address may be passed on - in Developers' newsletters, for instance.

If you wish to request allocations or reservations via email, we would be grateful if you could follow the following procedure:

- !Reserve: Save the CSV file from the 'items to be reserved' menu and email it.
- !Allocate: Save the list from the icon bar menu and email it.
- !Request: You will need to send !Request by post. (If, however, you have the !Email application, you can drop the data directory from inside !Request onto !Email and send that).

6502 emulators

In the interest of providing prior warning of changes which could affect Developers, we inform you that Acorn plans no further work on the 6502 emulators (65Host and 65Tube). They are not expected to be supported by future versions of the operating system.

T-pieces and blanking panels

Please don't forget that we can provide to Developers both T-pieces and blank rear half-panels at competitive prices. We have found that, unfortunately, a few of the T-pieces supplied recently to developers have oversize tapped M2.5 holes. If you have been supplied with any T-pieces, please sample your stock and let us know if you have any of these incorrect parts. We will, of course, then arrange to replace your affected stock.

The prices per hundred are:

T-pieces £40 exc VAT

Half width blanking panels £60 exc VAT

Bug reports

We would be grateful if, when you send in bug reports, you could send them in electronic form. The fault report template is on the enclosed Developers' disc 30/31 and can be used for suggestions as well as for actual faults found. Please don't decide not to send in a bug report simply because you believe others will have found it; they may have come to the same decision and we might never know!

Psion Developers' Conference

Psion held their annual Developers' Conference in London on November 11th and 12th. The conference was successful and informative. Both Acorn staff and Registered Developers were represented as were Developers who have joined the Acorn scheme under the reciprocal Psion/Acorn arrangements. Several of Psion's Registered Developers expressed interest in developing software specifically for the Acorn Pocket Book and the education market.

The Psion Registered Developers asked what sort of products the Education market might require. Those of you developing, or considering developing, Pocket Book products may like to share some of the ideas we have. Please do talk to us about the products you are developing. If we are aware of anyone doing something similar, we will tell you - but not who they are nor any details which we would view as confidential information.

Pocket Book software suggestions

Among the suggestions we have are the following:

- Dictionary with switchable definition levels (to suit differing ages and abilities)
- Bar code reader software/hardware for school libraries
- Applications to help teachers with their jobs:
 - Keeping records and making assessments
 - School attendance recording
 - Pupil progress monitoring
- Thesaurus
- Modern Language spell checkers
- Predictive typing (for special needs users)
- Simple logical operations to work with the Cards database: AND, OR, NOT etc.
- Games

Hardware Conformance Scheme

Hardware developers will be interested to learn of the launch of the Acorn Hardware Conformance Scheme. This scheme is, in principle, a 'self-certification' scheme. Developers who design products to meet Acorn's published specifications and who follow the hardware 'Code of Practice' will be able to display the Acorn Specification Compliant logo on their product and on promotional material relating to it. A copy of the leaflet describing the scheme is enclosed for your information. A press release to inform customers about the scheme is planned for the New Year.

Technical News

SWI "OS_SpriteOp"

In current versions of RISC OS, if in using OS_SpriteOp calls, you try to render sprites with an undefined mode number, SpriteExtend will try to check the mode number by calling OS_ReadModeVariable to check the state of the overflow flag (V-Bit). OS_ReadModeVariable will, however, return with the carry flag set (not the overflow flag) if the mode number or the passed variables are incorrect.

To work round this is to call OS_ReadModeVariable before rendering a sprite, and check the status to the carry flag to see if the mode number is valid. SpriteExtend will be fixed in future versions of RISC OS.

SWI "Wimp_LoadTemplate"

If using SWI Wimp_LoadTemplate on current versions of RISC OS, you may find that the SWI does not set the window sprite area pointer when the templates are loaded. As this subject is not covered in depth in the Programmer's Reference Manual, it is not unnatural to assume that the Window Manager will set the window sprite area pointer to something sensible. This affects the majority of applications except those written using RISC_OSLib (RISC_OSLib sets the sprite area using 'resspr_area()').

This is not a problem unless you have sprites in your window and you are not setting the sprite area pointer after loading the templates. The workaround for this is to set the sprite area pointer after loading your templates, to either the wimp sprite pool or your own private sprite area. This will be fixed in future versions of the operating system, where the Window Manager will default the sprite area to 1 (Wimp sprite pool).

Wimpslot

Developers should note that computers to be announced in the future, based on revised architecture may have a 4k page size, rather than the 8k, 16k or 32k page sizes on earlier models.

In general, programmers should (i) never assume a particular page size and (ii) not assume that the page size is related to the amount of RAM available in the computer. Software should work with any given page size as determined by the operating system.

On existing models the minimum page size has been 8k and, on computers with 2MB or more, it has been 16k. The introduction of computers with smaller page sizes has an important implication for existing software in that less memory may be given to a program's wimpslot.

Existing programs which specify their wimpslot perfectly should have no problem with the change to 4k page sizes. However, programs which slightly under-specify their wimpslot requirements may run out of memory and crash in unpredictable ways with a 4k page size.

To illustrate this and to provide a method of working around the problem imagine a program which needs a 5k wimpslot but specifies 3k in its run file, as follows:

```
WimpSlot -min 3k -max 3k
```

On existing computers the minimum page size is 8k and so the program will be given either 8k, 16k or 32k. But on a computer with a 4k page size the program will be given only 4k. Since it needs 5k it will not be given enough.

To ensure that your programs do not suffer from this problem you can investigate and change the wimpslot commands in their !Run files. If you have tested a program on an 8k page size computer then ensure that your wimpslot specification is rounded up to an 8k boundary. If you have not tested your program on an 8k page size computer but you have tested it on a 16k page size computer, ensure that your wimpslot is rounded up to a 16k boundary.

This change can be made NOW to help reduce support problems in the future.

DrawFile module

Acorn have developed a module that is capable of rendering RISC OS 3 Drawfiles via a SWI interface. Developers can freely distribute this module with their products as long as it is sent out inside !System, following the standard !System distribution rules which are provided with the module on Developers' disc 30/31. Please note that the drawfile module will not work on RISC OS 2 machines. The module itself does not contain any editing facilities for drawfiles, so it is only suitable for rendering.

Developers' Disc 30/31 contains the module, documentation on the SWI interface and a small example application written using RISC_OSLib.

Support for the RISC OS 3 Style Guide

The enclosed disc (Developers' disc 30/31) contains all the templates that are shown in the RISC OS 3 Style Guide. They are referenced in the template file by Style Guide page number rather than template name. You can freely use these templates in the development of your software.

Library support for some of the new templates is currently being developed by Developer Support. The new library is written using RISC_OSLib, and will be an extension to it. The library support will cover the following areas :

- Colour Selector
- Font Selector
- Save/Export (+ Save/Export selection)
- Print
- Scale View

The finished library will be distributed with source but will not be fully tested. Developers will be allowed to use the library in the development of their own products, but at their own risk.

The library will be ready by the end of the year.

RAM size

Developers should note that computers to be announced in the future based on revised architecture, if fitted with a certain RAM size, will not provide the same workspace as an equivalent RAM size computer based on the current

architecture. In particular, with some types of use, there may be noticeably less space available in, say, a 2MB configuration.

This change results from more flexible memory arrangements and changes to the operating system. It will also depend upon which utilities are in use. It is important that manuals, packaging and advertising for applications software do not simply talk about RAM needs based on current machine architectures. Configuration needs should either be indicated in a more general way, or specific model types referred to. For larger applications packages, it may be relevant to encourage the user to move up to the next larger RAM size if it is likely that space will be tight.

SCSI systems

Whilst demonstrating multimedia systems at various events over the last year, the problem of compatibility of SCSI devices has arisen. This has shown itself in both hardware and software incompatibilities, making it more difficult to assemble a system on-site without some previous knowledge of the particular components involved. If multimedia is to become widely available and used by our customers, it is essential that potential problems are avoided wherever possible.

The SCSI bus will often figure within a multimedia system, although in some systems a simpler hardware interface may be used. The latter will usually be lower in cost but less flexible if the system needs to be extended. When SCSI is the chosen interface, it is vital that hardware developers follow the SCSI standard, in particular the more recent SCSI-2 standard (not normally the wide bus variant). The defined SCSI connectors should be used and this means the 50-way ribbon '57 series' connector or high-density D wherever there is panel space. The 25-way D-type (as used by Apple) should only be used where panel space is at a premium as SCSI terminators are normally of the 50-way type. IDC block connectors, designed for internal equipment use, should never be used for exterior connections.

It is important that correct provision is made for SCSI terminators to be fitted at the end of the bus and only at the end. This normally means two 50-way connectors on a peripheral allowing a terminator to be added if needed. Internal terminators should not normally be fitted within a peripheral case. If they are, this fact should be clearly marked.

A selector switch, for selecting the SCSI device ID, should be fitted to the device case so that the user can easily note and change as necessary the device ID. The peripheral should be tested at the final design stage for compliance with the SCSI bus specification in terms of characteristic impedance, use of termpower etc.

All of the above is obvious you may say? Experience shows, however, that there are wide variations in understanding and the assumptions made by suppliers. This applies even outside multimedia, e.g. for simple hard disc drives where these are sometimes internally set 'permanently' as device ID 0 and internally terminated on the wrong assumption that only one device will ever be used on the system apart from the Host Adapter.

Please do your bit in making life simpler and more

predictable for the end-user.

CDFS

The CDFS 2.20 Developers' Disc has now been released. This disc set (two discs) has been mailed to all Developers who have a licence to distribute CDFS on their SCSI cards. Developers who have Acorn SCSI cards and would like to upgrade to version 2.20 of CDFS should contact Developer Support. We will then send you an EPROM.

A CDFS upgrade ROM for Acorn SCSI cards will be available to customers through Acorn dealers at a later date, product code AKA35.

CDFS 2.20 is the version of CDFS which provides mode 2 form 1 support required to read Photo CD discs and is, therefore, the first step towards Photo CD capability. Currently, only Sony CDU 541 and CDU 561 CD-ROM mechanisms are capable of reading the mode 2 form 1 tracks in which the Photo CD information is stored. The ability to access the Photo CD disc means only that the contents of the disc appear to the user as a directory structure just like any mode 1 disc.

CDFS 2.20 does not contain any software which allows the extraction, interpretation, manipulation or display of Photo CD images stored on a Photo CD disc. This capability will come with the release of Photo CD itself.

Photo CD

Work continues on Photo CD. The Sample Application (currently called !Photoview) is being updated to resolve a problem at 16/24 bit colour depths and to incorporate Acorn's dithering code. The Developer's Toolkit (C libraries) is dependent upon the completion of the Sample Application.

As mentioned in an earlier newsletter (No 29), Registered Developers may request pre-release access to the Photo CD module and a modified version of !ChangeFSI as well as a complete set of SWI definitions.

Neither the Sample Application nor the Developer's Toolkit C library will be available to Developers until they are fully featured and have satisfied Acorn's SQA.

ChangeFSI

The latest version available to Developers is version 0.93. This is the latest released version for distribution under licence with your products and is included on the enclosed Developers' Disc 30/31.

Territory building tools

Acorn is currently working on a set of tools that will ease the creation of new territory modules for use with RISC OS version 3.10 or later. An initial version of the tools and the associated application note will be made available to Developers early in the New Year.

The set of tools will enable Developers to produce new language variants for RISC OS, by providing a new territory module to be soft-loaded onto a RISC OS machine. They will allow for the creation of new keyboard-drivers and the provision of territory specific

symbols and will provide for the definition of new time zones and sort orders.

A tool will also be included to enable translation of the ROM resident messages.

While Acorn recommends that a complete territory is provided whenever possible, the tools will allow for the creation of partial territory modules containing some, but not all, of the information and facilities that can be provided by such a module.

Developers wishing to develop new territory modules should register their interest with the Developer Support department, and apply for a territory number. The tools will then be sent to them when they become available in the New Year.

!Printers enhancements for RISC OS 3

In the New Year, customers will be offered a set of disc updates at low cost for RISC OS 3.1. In particular, these discs will provide an enhanced !Printers together with modified modules and Printer Definition Files (PDFs). In addition to various bug fixes, colour printing will be greatly improved through the use of modified PDumperSupport and ColourTrans modules together with an extended printer palette file system.

The range of PDFs will be extended and the associated ReadMe files updated. There will be support for HP Deskjet colour printers in addition to other products.

Developers should not need to do anything, other than be aware that their customers should have access to improved printing with their application software.

If you need a copy of the latest beta version urgently for testing purposes, please contact Developer Support.

Expansion cards

Please note that, in future Acorn machines, Acorn will be moving to support only the single-width Eurocard specification. In particular, please bear in mind the following points:

- (i) the width of the PCB should be 100mm.
- (ii) the PCB to rear panel fixing brackets should jut

out no more than 2.35 mm on each side of the PCB. Ideally they should be within the 100mm PCB width.

- (iii) To achieve smooth insertion and removal of the card it is best to have no tracks or components within 0.1" of each edge of the PCB.

If you are in any doubt about existing cards or designs for new cards please contact Developer Support.

This note is not included - in its entirety - in Expansion Card Specification, Issue 4 recently mailed to hardware developers and should be regarded as additional to it.

Obsolete SWIs

Acorn are looking to "tighten" the API (Application Programmers Interface) in the future and we are looking for developers input on this. If you or your programmers have any particular concerns regarding the API (i.e. what calls should be there, which ones should be removed etc...), then we would be grateful if you could forward your views to Developer Support.

PCBs available to OEMs

Acorn have launched a component product, an A5000 fully-populated pcb for the embedded processor market, details of which are available from Developer Support. Do ask if you would like us to send you details.

Please note that Acorn's present distributor for the pcbs is Farnell Electronics to whom all sales/availability/pricing enquiries should be addressed.

Developers Disc 30/31

Included:

- Style Guide templates
- ChangeFSI v 0.93
- Fault report template
- Allocation applications: !Reserve, !Alloc and !Request - or equivalent

We did not have room on the disc, this time, to include the cumulative list of Newsletter contents. We'll try to include it next time.

News from non Acorn sources

Rheingold Enterprises

Rheingold Enterprises would like to make other software developers aware of their multi-tasking monitor/debugger Vigil, which made its first public appearance at Acorn World 93. Vigil allows you to view application workspace, ARM register contents, Wimp poll events and Basic variable contents while your application is running in its normal Desktop environment. Workspace contents and BASIC variables can be altered while the program is running. Vigil can also inspect the code area and workspace for any module, and has many other functions which are extremely useful when developing multi-tasking software.

Several Developers are already finding Vigil useful. If you are not yet one of them, Rheingold is offering the package to Registered Developers at a discounted price of £22.50 including VAT.

For further details, contact Alan Wrigley on 0925 210657.

From Kate Crennell - Crystallographic Toys for Education

I am looking for information on 'Crystallographic Toys'. The BCA, British Crstallographic Association wants to encourage school children to appreciate the principles of symmetry using 'Colouring books' with patterns made on the principles of the plane groups, or to use 2D or 3D

'Construction Kits' which demonstrate ways to tile the plane or construct space filling models. There may also be some simple microcomputer programs which encourage exploration of patterns and polyhedra.

The BCA Council has asked me to make a report to them, explaining what materials are currently available, and how they might be used. Suggestions so far include a workshop for teachers at our Conference in Easter 1994, funding of a 'Schools project Pack', and travelling expenses for a teacher to tour UK SATROS (Science and Technology Regional Organisers) to demonstrate the uses of the materials.

I am asking your readers for help in this project. Please can you send me details of suppliers of such educational toys or computer programs, or of any other projects like this, from which we may get advice. I am also looking for primary or secondary school teachers who may be already teaching using such materials. I will write a report with my findings for 'Crystallography News' the newsletter of the BCA.'

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P.R.E.S. Ltd

ProjectING is a powerful, graphically-based, interactive, project management program that has been developed by P.R.E.S. Ltd in conjunction with Acorn. The projects are drawn in an easy-to-understand pictorial format known as a network drawing or PERT chart. The program performs critical path analysis and displays the results on the screen instantly. Calenders allow different work patterns to be defined. The network drawing and a wide range of user defined reports about the project can be printed.

ProjectING provides powerful resourcing features detailing the people, materials and equipment used. Resource requirements and costs can be listed for a single project or across several projects. The jobs for each person working on the project can be listed, together with the start and finish dates and if they are ahead of, or behind, schedule.

Project management is crucial to the effective management of a business, allowing resources and timescales to be controlled effectively. ProjectING normally costs £299 + VAT but P.R.E.S. Ltd are offering the program to Registered Developers at a special price of only £199 + VAT. Contact P.R.E.S. Ltd (Tel: 0276 472046 Fax: 0276 451427) for more information and free demo disc.

Enclosures:

Developers' disc 30/31
Hardware Conformance Scheme leaflet

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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