Developers' Newsletter
No 32 - March 1994

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Acorn

General News

1994 Subscriptions and Developer Agreements

Many of you have sent in your 1994 subscriptions and Developer Agreements. We would be very grateful if those of you who have not yet sent them would ensure that both are sent together to Developer Support and that, if you have questions about either the subscription or the Agreement, you contact Developer Support in writing.

Monitors

Acorn has introduced two new monitors, both built for us by Microvitec. AKF50 is a high resolution multiscan monitor and AKF52 is medium resolution. If you need technical specifications of either monitor, both of which are capable of a wide range of Acorn screen modes including Mode 12 and VGA, please contact us and we will send you a leaflet. AKF50 appears on the Developer Price list but, owing to supply limitations, we cannot yet supply AKF52. If you require an AKF50 with a computer system which is shown on the price list as including an AKF30 or AKF40 monitor, please add £50 plus VAT to the system price when sending your order and payment.

Acorn Access

Acorn Access, Acorn's peer-to-peer networking system has now been released. Prices are included on the Developers' Discount Price List. Acorn Access, among other benefits for Acorn's customers, will provide Developers with a cost-effective means of testing products in a network situation.

If you, as a Developer, already have Acorn (AEH54) Ethernet cards and the necessary cabling etc. then, for the purposes of testing, it may be possible to provide upgrade EPROMs for your cards at £10 exc VAT per PROM. Please let us know if you are likely to require Acorn Access EPROM(s). If you have third party Ethernet cards, you should contact the third party supplier for details of the necessary upgrade.

New Developers' Price List

A new copy of the Developers' Discount Price List (dated March 1994) is enclosed. It supersedes the October 1993 list. Please use the March 1994 list to replace any earlier versions.

TCP/IP pricing

Please note that there was an error on the October Developers' Discount Price List with respect to the TCP/IP product. A new price list is enclosed. See above.

RISC OS Upgrade Discs

Enclosed with this issue, you will find a copy of RISC OS Upgrade Disc 1. This is one of two discs being made available to customers around this time. The discs are intended to collect together various detailed updates and bug-fixes developed over preceding months. Disc 1 embraces an update to !Printers and its associated printers PDF directory. An attached sheet summarises the changes and benefits introduced in Disc 1. The Disc 2 image will be frozen during March and contains updates to some of the RISC OS 3 applications such as !Alarm, !Calc, !ChangeFSI etc. If you wish your customers to be able to take advantage of the improved printing capabilities provided by Disc 1, there are various ways a customer can obtain a copy of the Disc. You may provide a copy with your software application pack or to a customer on request. Alternatively, the customer may obtain a copy from his or her dealer, from a magazine cover disc, etc. A small, charge may be made to the customer for copying the disc. The disc should normally be copied complete.

NFER Software in Schools Survey

NCET have given us permission to use some of the findings published in the Software in Schools Survey prepared and published for them by NFER.

Research into the provision, acquisition and use of computer software in primary and secondary schools was carried out between March 1993 and August 1993 by the National Foundation for Educational Research under contract to the National Council for Educational Technology.

Among the main findings were the following:
For primary schools, the two sources most frequently used to obtain software were the LEA computer centre and commercial educational software catalogues. Secondary schools obtained programs from commercial educational software catalogues more frequently than any other source.

For the financial year 1992-93, the median expenditure on software was £150 for primary schools and £500 for secondary schools.

Many primary schools reported purchases of cross-curricular and subject-specific software without favouring one type significantly more than the other. Over 60 per cent of secondary schools' IT departments reported that most of their software purchases had been cross-curricular or generic.

Mice and printers were so widely used both in primary and secondary schools as to be regarded as virtually essential parts of the computer system. About one in five primary schools stated overlay keyboards were very widely used and in secondary schools a similar proportion said CD-ROM players were very widely used.

Both primary and secondary IT co-ordinators expressed a preference for graphical interfaces such as Microsoft Windows, Acorn RISC OS and the Apple Macintosh desktop. There were also some suggestions that these interfaces facilitated pupil progression and attainment, especially when used at both primary and secondary level. Few problems were reported of students getting lost on these systems.

IT co-ordinators who were trying to improve the skills of their colleagues by making staff machines easily available in or near the staff room found that user-friendliness was very important. Teachers preferred to use windowing interfaces for this reason. The transition from primary to secondary school was easier when younger children had

already established competence in using GUIs. Teachers emphasised the range and complexity of applications that these primary children could handle. For example, dropping illustrations into text presented no problems. Moving blocks of text, editing and changing fonts and letter sizes was also part of everyday word processing in primary schools where the newer interfaces and powerful machines facilitated these approaches to communication skills.

More than half the schools had a mixed machine platform and a range of software user interfaces to contend with. Students had no trouble switching from old operating systems to new ones and back again, whereas some teachers found this more difficult.

Teachers valued the support materials provided by educational software publishers. Primary teachers found that teachers' guides, suggestions for activities and pupils' worksheets were most useful. Within secondary schools, some departments (especially Mathematics, History, Geography and Special Educational Needs) found these types of materials very useful, whereas others either did not use them or found them of limited use.

Teachers in both primary and secondary schools felt software publishers could improve their support to schools by providing:

- less complex manuals together with simple 'start-you-off' guides that were easier to understand
- short self-help cards summarising main points for teacher/pupil use
- more opportunities to examine software before purchase (either through 'on approval' arrangements or software demonstrations)
- more software related to specific subject curricula at Key Stage 3 and especially at Key Stage 4.

Acorn in Germany

You will probably be aware that Acorn now has started a company in Dusseldorf, Acorn Computers GmbH. This represents a substantial investment for Acorn and we are glad to welcome Mr Hermann Haehner as a new member of the Acorn community from January 1st 1994, taking care of marketing and sales at Acorn Computers GmbH.

Mr Haehner's background includes both technical (electronics) and commercial (economics and marketing) experience. Most recently he was Director Sales and Marketing for Commodore GmbH and was responsible for sales of various computers, home computers, PCs as well as peripherals and software in Germany and Eastern Europe.

Mr Haehner looks forward to working with Developers and will focus on making the Acorn brand a success in Germany - an objective with which we are sure that you will concur and which helps to ensure your continuous success. Mr Haehner will always be open for proposals which will help us to reach our common goal.

Mr Haehner asked us to pass on to Registered Developers some information relating to the market opportunity in Germany. With the virtual withdrawal of Commodore and Atari from the consumer market, a real opportunity exists. Mr Haehner will be using his contacts to promote Acorn in the retail market.

Shows in 1994

Acorn User Show, Harrogate
April 22nd - 24th
Organisers: Safesell
Contact: Geoff Potter
Tel: 0737 814084

Access IT, Leicester
July 1st and 2nd
Organisers: Acorn
Contact: Sarah Reardon
Tel: 0223 254214

Acorn World, Wembley
October 28th-30th
Organisers: EPS
Contact: Steve Bozdan
Tel: 0295 788386

Technical News

Module versions

To ensure that customers have up-to-date RISC OS configurations, it is important that Developers always distribute and RMEnsure up-to-date versions of modules that are to be merged with !System. Although an application may run with an earlier module, we wish to encourage users to maintain an up-to-date and typically more bug-free environment. Please check all of your existing software catalogue when you are reduplicating or updating an application version to ensure that you are using the relevant module version number. For example, the relevant version of CLib for a RISC OS 2 user is 3.75; no earlier version than this should be included in current production application software.

If you distribute !System you should now use the version

on the enclosed Developers' Disc 32. This version allows for a mixed 'economy' of RISC OS 2 and RISC OS 3 machines.

Floating Point Emulator

Developers currently supplying FPE software in their applications for use with RISC OS 2 will probably be using version 2.80. With RISC OS 3, RMEnsuring the FPE module should prohibit this version from being loaded in place of the later version 2.87 in RISC OS 3.

When the FPA hardware product, ALA23, was introduced last year, a later version of the software, FPE400, was introduced. This included some version 2.80 bug fixes. Over the last few months, this FPE400 software has itself been to subject to further update; it is now at version 4.03.

Enclosed with this Newsletter is a copy of FPEmulator

version 4.03. We would ask all Developers currently supplying the FPEmulator module with their product to switch, as soon as convenient, to this latest version. RMEnsuring will allow the version in RISC OS 3.1 also to be substituted. Although in most cases users will not have been affected by the bugs fixed since version 2.80, there are situations where the newer code will avoid problems.

Data interchange formats

In essence, this relates to filetypes within the Acorn world and the use of good de facto standards for import from and export to other platform GUIs. Variety reduction is vital within the Acorn world and this means minimising the variety of filetypes in use. Please don't ask for a new filetype without trying to use one of the existing popular types. Please don't ask for a filetype just to get a new fancy icon for your application. If you are trying to achieve differentiation in your application by the way it delivers results to the user in an easy-to-use way and with a good understanding of the needs of the user, it is better that you do not try to be different by having a 'different' user interface, filetype icons, widgets or whatever. We see far too many new applications that have obviously tried to give priority to having a different look-and-feel rather than trying to deliver better productivity to the customer. So, in the interests of future standardisation, some examples of good filetypes:

- Text: Use Edit 'Textfile' or Rich Text Format (RTF) if you need a higher level of textual definition. Use LF terminator characters, not CR or CRLF. Only use valid Latin1 characters in the ISO8859 character set wherever possible and don't use specially designed characters such as left and right arrow from the System font.
- Bit image: For Import, use the old or new Acorn Sprite format. For Export, use the old Sprite format unless the new is necessary to represent the content. Use ChangeFSI for import/export from/to other platforms.
- Vector: Use the Drawfile format.
- Sound: Use ARMovie (AE7). MIDI capability may be added to AE7 in the future.
- Sprite animation: Use a Sprite file with sprites numbered 0 through n, or an appropriate ARMovie video file or the ACE Film (D6A) format. The ARMovie format is probably the best longer term approach where it meets the need.
- Video: Use the ARMovie file format.
- Spreadsheet: Use CSV (or SID if relevant). Lotus .WK1 may be relevant for import/export from/to other platforms amd for including formula information.
- Database: No clear standard currently apart from CSV or TSV.

Icon design

Please remember, when designing icons, to follow the RISC OS 3 Style Guide and stick rigidly to the rules. Get a good designer, if you can, to design the Icon. Document (Filetype) icons should have a black outline and, if possible, should be clearly connected to the application icon. Always use square boxes for Filetype icons of size 68 OS units width with a 2 OS unit (Sprites22) or 4 OS unit black outline.

Overall design

As a general guide, it is often a good idea to stay with well-designed, small application programs doing a small number of things really well at a sensible price to the user. If you can afford to invest in a mega-application, do make sure it is well-specified against user needs and benefits rather than having endless features as an end in themselves. Developers often find that it is wise to plan for the need for disc updates to the user during the first few months of the product's life and to formalise the arrangements for implementing this. Although we hope you will all have it as your aim, most of you will already know that is is extremely rare to achieve a bugfree product!

Applications' recognition of 'foreign' filetypes

If a file is dropped onto an application which does not understand the filetype, rather than nothing happening, the application should display an error message indicating that it is unable to handle the filetype.

RISC OS 3 Style Guide Support

Developers' Disc 32 contains library support code for some of the dialogue boxes shown in the RISC OS 3 Style Guide. Although the software is working, it has not been fully tested and we cannot guarantee its suitability for any particular purpose. We can also not enter into any communication regarding the library, other than that of fault reports and enhancement suggestions.

The library contains support for the following:

saveas dialogue (with selection option)
new font picker
3d colour picker
scale view
new printer dialogue boxes

The suite comes with complete source.

A prototype template editor is also supplied, !WinEdit, which is specifically aimed at creating RISC OS 3 Style Guide compatible dialogue boxes. See the ReadMe files on the disc for more information.

Mode independence reminder

This is just a reminder to developers to ensure that their software is mode independent and does not rely in running in a particular mode. You should use ColourTrans for mode indepedent colours and not rely on particular characteristics of any particular mode.

It is worth noting that, in the future, Acorn will implement a wider range of user-configurable modes and support deeper colour depths (modes with 32 thousand and 16 million colours - 24-bit graphics).

Loading standard sprites (iconsprites)

Many third party applications still load the standard sprites that used to be required by RISC OS. These sprites are the option and radio icons, along with the up/down and left/right arrows. Since the advent of RISC OS 3, these

standard sprites have been in the ROM. They should not be overwritten by an application loading them.

If you wish to support these icons for RISC OS 2 then you should supply them in a separate sprite file inside your application and load them with the following line:

RMEnsure UtilityModule 3.10 IconSprites RO2Sprites

Territory SWIs and R0

Please note that the Programmer's Reference Manual states that for many of the Territory module SWIs R0 is preserved upon SWI exit. This is a mistake in the manual as R0 gets corrupted. You should take note of this when developing software that use these SWIs.

Testing software with virus protection software loaded

When you are about to release software it is important that you check that it is not infected by a virus by checking the disc with virus protection software. It is, however, also important to check that your software runs when virus protection software is loaded. Virus protection software checks !Boot and !Run files for virus strains and a command in one of your files could raise a false virus warning and prevent the software from running.

Squeezed modules and RMRun

A number of developers have been supplied with ModSqz utility for producing squeezed modules for podules etc that are expanded once loaded in the ROM. There is, however, an error which causes the module's runnable entry point not to be entered if the module is squeezed.

If you are supplying a module that needs to enter the runnable entry point then you should not ModSqz it.

Wimp_ClaimFreeMemory

Please note that, in future versions of RISC OS, once you have called the SWI Wimp_ClaimFreeMemory you will not be able to extend any of the system's dynamic areas (such as increase an application's WimpSlot).

Mode removal

Please note that in future versions of RISC OS there will be no support for modes 16, 17 and 24 as standard.

Opening files on locked discs

It is worth noting that if you open out a file on a locked disc, a file handle will still be returned, but errors will be returned when write attempts are made. You should write your software in such a way that it detects errors during writing to the file, as well as when you open it.

Changing modes in BASIC

In future versions of RISC OS, the BASIC command 'MODE' will call '*wimpmode' to change mode. If you have software that takes over the machine and changes mode then you will need to ensure that the correct desktop mode is restored. This should be done by reading the desktop mode before changing it and then restoring before the program exits.

Using Hourglass

As technology moves on, the size of applications, and the data files that they will require to load, increases. For example, with the advent of 24-bit sprites, you may be required to load files that are many megabytes in size. It is important that you use the Hourglass module to show a visual delay to the user while a file is being loaded.

Removal of 40 Track drive support

In future versions of RISC OS, there will be no software support for external 40 track disc drives. Support for 40 track disc formats, however, remains.

Using malloc

In future versions of RISC OS, 'malloc(0)' (which calls the SharedCLibrary) will no longer return 0 but a pointer to a 12 byte block. Software writers should not rely on malloc(0) returning a NULL pointer.

Supporting 3D style

Please note that if you are delivering software which can either be 2D or 3D, then you should check the machine's 3D state by reading CMOS 140 and checking bit 0 to see if 3D is enabled. If bit 0 is set then the machine has a 3D look-and-feel. This will ensure compatibility with future versions of RISC OS.

String expansion in obey files

In your applications' !Run and !Boot files you should ensure that any 'if' statements do not extend pass the 255 character limit for the command line when they have been expanded. If the 255 character limit is passed then you will get the error "Expression is a string". For example, the following line could expand to greater than 255 characters:

If "<Wimp$ScrapDir>" = "" OR "<Wimp$ScrapDir>" = "System:ScrapDir" OR "<Wimp$ScrapDir>" = "<System$Dir>.ScrapDir" Then Echo Hello

to solve the problem you would split the statement over different lines, like the following:

If "<Wimp$ScrapDir>" = "" Then Echo Hello
If "<Wimp$ScrapDir>" = "System:ScrapDir" Then Echo Hello
If "<Wimp$ScrapDir>" = "<System$Dir>.ScrapDir" Then Echo Hello

*Screenload and 256 colour modes (64 entry palette)

If you attempt to do a *ScreenLoad in a 256 colour mode with a small palette (65 entries) then the colours displayed for the sprite will be wrong. Application developers should avoid making this call.

Serial Devices module

The SerialDeviceDriver v 0.22 is supplied on Developers' Disc 32. It is a RISC OS 3 only module and provides enhancements to that present in the RISC OS 3 ROM. The module improves interrupt priority which could, otherwise, cause some applicatuons to stop working in machines fitted with 6551 chips.

If you are supplying software which uses the Serial Port then you will need to supply this module with it.

The standard rules for distribution of !System apply to SerialDeviceDriver v 0.22.

Expansion card Specification

This is currently in the process of update, partly to reflect the implications of computer platforms yet to be announced. There is one particular aspect which designers of new expansion cards need to take note of i.e. PCB width. The existing PCB drawing does allow designers to exceed the standard Eurocard width of 100mm if they so choose. New cards should no longer exceed this dimension. It is also important that designs keep approximately 2 mm along each side edge clear of obstruction such as component pads etc.

Service Manuals

Please note that the module level service manual for the A3010/A4000 series of products is now available. This will not be relevant to most developers; in many cases the Technical Reference Manual will have provided appropriate information. If you have a specific need for this Service Manual, or any other, please contact Developer Support.

Contents of Developers' Disc 32

Developers' Disc 32 includes a Readme file, Sparkplug and four directories:

Newsletter contains the contents lists of Developers discs 25 to 32 inclusive.
ROLib_Xtra contains library support code for some of the dialogue boxes shown in the RISC OS 3 Style Guide.
SerialDev contains the Serial Device Module.
SysRes contains the system resources (!Scrap, !System and !Sysmerge). If you distribute system resources with your product, as Registered Developers are authorised to do if they comply with certain conditions, then you should, at your earliest convenience, cut into your product production the versions on Developers' Disc 32. This version of !System deals with a mixed 'economy' of RISC OS 2 and RISC OS 3 machines.

News from non Acorn sources

From Stallion Software

StrongED 3 has over 124 keyboard functions which are all reprogrammable to your favourite keypresses or you can add your own. Features include:
Save all edited C file and then run make.
Block copying, cursor copy & cut paste buffers.
Advanced search and replace over block/file or all loaded files.
Goes to, lists and sorts procedures.
Supports throwback.
StrongED comes with 6,000 lines of on-line help - SWIs, VDU code, PLOT numbers, VIDC, BASIC, Assembler - and includes the register and block structures for most wimp SWIs.

Stallion Software are offering StrongED 3 to Registered Developers at a special price of £20 (inc VAT & P&P). Stallion Software Limited, Arundel House, Arundel Road, Camden, Bath, BA1 5JX (Tel and fax 0225 339090).

TML from D.R Computer Products

TML - The Missing Link - This product is part of a range of high speed computer-computer interfaces designed by D.R.Computer Products. The range consists of 4 separate products:

TML_Econet which fits to the Econet port in A300/A400/A500/A3000/A5000 and BBC Master computers.
TML_A4 which fits in the Acorn A4 portable
TML_Podule which fits to any machine with a Podule bus connector.
TML_Network which allows interconnection of up to 8 units to 1 host.

The TML product range is based on Transputer Link technology and allows inter-computer communications at 10million bits-per-second (20million bits-per-second for the high-speed range).

There is a variety of software for the TML range, from simple 'Chat' programs through backup software to complete filing systems. The product is supported by Atomwide RemoteFS and also D.R Computer Products' own software.

Some of the main users are Universities all over Europe, Some proprietary systems houses and development labs.

If you wish to find out more about TML, contact D. R. Computer Products, 5 Bridge Court, Bridge Road, Chertsey, Surrey, KT16 8LX.

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Developer Support
Acorn Computers Ltd
Acorn House
Vision Park, Histon,
Cambridge CB4 4AE

Developers' direct line: 0223 254248
Direct fax: 0223 254264
email: ISVQuery@acorn.co.uk

This newsletter was produced using EasiWriter from Icon Technology