Andrew

Andrew Consortium
School of Computer Science
Carnegie Mellon University

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The Andrew View Newsletter

Highlights in this Issue

Andrew Ad Campaign

Look for us in your favorite computer publication !

My Own View - Funding Andrew, Cont'd

Wilfred J. Hansen, Director

When last we met, I talked about how to fund Andrew development for the future and I offered a number of alternatives.

Thank you for your interest and your replies.

Fourteen people responded with a variety of comments ranging (in cooking-time) from well-done to barely-thawed-out (pun intended;-) A compilation of the various ideas is available upon request *<wjh@andrew.cmu.edu>*.

The two most popular alternatives, with four votes each, were (a) to continue giving away the source code and (b) to give away evaluation copies, but charge government and commercial sites for licenses. Two people preferred giving away binary versions and charging for documentation, but they also wanted the source to be given away.

Many readers suggested various alternative sources of funding, such as: advertise, distribute as shareware, sell CD-rom versions, publish a book, charge for support, and sell training. One interesting suggestion was to add monitoring support and print a monthly report suggesting a monetary contribution based on usage.

After considerable thought, "here's what we're gonna do": We have already released binary versions of Andrew7.5 for six platforms (story below). Anyone can pick these up from our web or ftp sites and use them; however, no one is allowed to sell them or to sell media containing them. We are prepared to negotiate licenses for organizations wishing to bundle Andrew with their products.

The source code will continue to be available to members of the consortium. In addition, a license for non-commercial use of the sources is available.

We are enhancing the documentation and we plan to make those enhanced versions available for sale via NetBill.

The sources for version 6.3 of Andrew (in C) will remain available for general unencumbered and free use as they have always been.

New, Free Release - Andrew7.5 Binaries in C++

Fred Hansen and Rob Ryan, Technical Staff

In mid-August, the Andrew Consortium proudly released binary distribution packages for the ***Andrew User Interface System***--*Andrew7.4*--the first public release of Andrew objects in C++. Since this release, a number of users have tested the system and sent us their comments, which has further resulted in a September upgrade of the binaries. The system has been repackaged and a few minor problems have been fixed in *Andrew7.5*, now available in place of *Andrew7.4* (for details, see "Enhancements" articles below).

Users who upgrade to the latest Andrew version will enjoy its most advanced ever integrated suite of compound-document applications with which they can create, edit, and view documents containing combinations of text, pictures, graphs, figures, spreadsheets, and other embedded objects.

Andrew7.5 is available free of charge and is packaged in binary form to simplify installation. It can be used on these popular systems:

rs_aix325	**IBM RS/6000 (AIX 3.2.5)**
pa1.1-hpux90	**Hewlett-Packard 720 (HPUX 9.0)**
pmax_ultrix43	**DECstation 3100 PMAX (Ultrix 4.3)**
sparc_sunos413	**SUN Sparcstation (SunOS 4.1.3)**
sparc_sunos54	**SUN Sparcstation (Solaris 2.4)**
ix86_linux	**Intel x86 (Linux: Redhat & Slackware)**

In most cases, the distribution will also operate with later and sometimes earlier versions of the respective operating system.

To obtain the new binaries, users with web browsers should view the consortium's World Wide Web page at *http://www.cs.cmu.edu/˜AUIS*; those without web access can retrieve the binaries via anonymous *ftp* at *ftp.andrew.cmu.edu:pub/AUIS/bin-dist*.

Andrew7.5 is installed by loading up to six "packages," the first of which must be

w - the word processing package

With this package alone, the binary should work. It is not necessary to load everything onto your system, but if you choose to, you may then also install any of these additional packages at your site:

h - ´help' browser, help documents, and source code editors for: assembler c c++ help-files idl lisp modula-2 modula-3 pascal perl rexx

i - major insets: figure, image, raster, table; the ness scripting language and the ADEW developer's tool

m - mail and bulletin board reader, write, and manager

d - programmer documentation

a - everything not included in the above

The binaries are compiled to assume a standard installation directory of /usr/local/andrew. If Andrew is installed in this directory there is no need to set ANDREWDIR in the user's environment. Instead, only the user's path needs to be changed in order to run Andrew applications. If Andrew is installed elsewhere, ANDREWDIR and possibly a library path variable must be set in the environment.

Once in the binary archive, users will see that the sub-directory for each system has a 'ta 8n `README`file describing *Andrew7.5* and an 'ta 8n `INSTALL`file with detailed instructions.

If you have problems downloading the binaries, please send email to *<info-andrew-bugs@andrew.cmu.edu>*. Other comments and questions about the Andrew system may be addressed to our discussion forum at *<info-andrew@andrew.cmu.edu>*.

Enhancements: From Andrew6.3 to Andrew7.5

The *Andrew6.3* release took place in 1994. The system, written in C, is (and will remain) available free to the public in source form. In recent years, the Andrew6 series was converted to C++, making an Andrew7 version. The most up-to-date software in this category, *Andrew7.5*, includes many new features and improvements which make it the better system to use.

While we could never list all of the differences between the two Andrews, here are some of the chief highlights:

o **ATK** - All Andrew objects are now derived from class ATK. In consequence, object types can be tested and their code can be loaded dynamically.

o **htmltext -** Replaces the former htmltext object with a somewhat more general package. (Later versions will be more complete.)

o **ez2html** - Program converts *ez* text files to HTML format. Can be used as part of a server to serve the web from Andrew files.

o **urlbutton, mkurlbutton** - Support for putting web addresses into documents. In Andrew they appear as buttons, but they convert into hyperlinks in HTML.

o **new direct-to-PostScript printing** - Print formatting is far faster, the resulting files are smaller, and there is no longer a dependence on 'ta 8n `troff`or 'ta 8n `psdit`. The old troff code is still in the system to support existing files.

o **color manager** - Several strategies have been implemented to make images appear in the most accurate colors possible. The color manager is shared among all Andrew applications so optimization takes place across all Andrew windows. To restart the color manager at any time, simply invoke the command ''ta 8n `acolorman´`.

o **recursive search** - The recsearch package provides for searching -ALL- strings, whether in the text or in objects embedded in the text. This package is not the default, but can be activated by adding these two lines to your ˜/.atkinit file:

```
addmenu recsearch-begin "Search/Spell,RecSearch˜62" im

addmenu recsearch-resume "Search/Spell,Continue˜64" im
```

o **srctext** - Many improvements have been made to the modes for editing files in particular programming languages. New support has been added for idl, perl, rexx, and scribe.

o **gofig** - An object/editor for displaying diagrams of positions in the game of *Go*.

o **batmail** - An interface to the Andrew messages format from within GNU emacs.

o **bison** - The new features introduced in Andrew Bison over the last few years have now been incorporated into the version available from the Free Software Foundation. For the time being, Bison is still being distributed as part of Andrew.

o **mkparserclass** - Converts bison output for use by the 'parser' object. Applications can have multiple simultaneous parses, with each represented by a separate object instance.

o **recover** - Part of support for unknown insets. If you edit a file that has been created using insets not available at your site, the 'unknown' inset is substituted for them. If the file is saved in this state, the insets are replaced with instances of the 'unknown' inset. The original file can often be reconstituted by processing it through the ‘recover’ program.

o **runbutton** - If a runbutton object is clicked on, it can initiate a script. Security is provided by allowing the user to control which directories scripts are executed from. Scripts can be binary code or Ness scripts.

o **aaction/avalue** - These objects provide a type-safe mechanism for calling arbitrary functions.

o **flex** - The flex, mflex, and oflex classes support declaration of flexible arrays of characters, structs, or objects, respectively. The array may grow as bounded solely by memory limits.

o **miscellaneous revisions**

No longer supported, but converted and remain in the source code:
vui - ASCII mail interface (use batmail instead)
calc - a toy calculator
chump, champ, chimp, chomp - datebook application

Superseded:
lexan - (’parser’ now uses a different interface)
popts - (replaced in new printing system)
preview - (use ghostscript instead)

Obsolete:
type, chtest - (these were for objects coded in C)
cregister - (part of old genstatl)
profile - (unportable code profiler)
rle - (incomplete image format processor)

o **bug fixes** - Literally thousands.

Platforms for Andrew - User Poll

The release of Andrew7 binaries marks the successful completion of the consortium’s **Platform Plan for 1996** (see *The Andrew View Newsletter*, *Winter 1995* and *Spring 1996*). Our goal was to make the Andrew7 series run on the six platforms most frequently employed by Andrew users. Goal achieved. Under the present circumstances, however, the consortium will not be able to commit itself to building ports for any additional systems this year. Undoubtedly, this still leaves numerous *Andrew6.3* users and "would be" *Andrew7.5* enthusiasts unable to load the new binaries on their platform of choice.

We have already heard from a number of Free BSD, SGI Irix and DEC Alpha users who would upgrade to *Andrew7.5* if the system worked on these platforms. We suspect there are many others.

We would like to poll the entire group to see just how many of you are interested in the consortium making new ports a priority for 1997. (We would also like to find out just *how* interested you are, i.e. whether or not your request comes with support in the form of a membership grant to the Andrew Consortium to fund the work.) If there are enough interested parties, and funding can be secured, port building would move up our ladder of priorities for the coming year. Remember: With a membership grant to the Andrew Consortium, you and your organization would have full access to the *Andrew7.5* source code. As a member, you would also have a unique opportunity to work with the consortium on setting up and customizing your machine to get the most out of the Andrew User Interface System.

If you would like to participate in this poll, simply send your responses to the following questions via email to *<info-andrew-request@andrew.cmu.edu>*.

Request for Additional Andrew Ports

Machine type:	
Operating system type:	
Urgency:	1996 or 1997
Membership grant:	Yes or No
Comments:	

If you prefer, your responses can be entered on the polling form linked to the Andrew Consortium's web page at *<http://www.cs.cmu.edu/~AUIS/poll.html>*.

Documentation Project and NetBill

AnnMarie Zanger, Assistant Director

The Andrew Consortium has joined up with the Information Networking Institute (INI), another research group at Carnegie Mellon University (CMU), to offer Andrew documentation on-line in the coming months.

The INI is the home of the NetBill project at CMU. NetBill researchers have designed the protocols and software to support a dependable, secure, and economical payment method for purchasing digital goods and services over the Internet. NetBill is especially designed to handle low-cost items; for example, journal articles for pennies a page. This made the electronic commerce project particularly appealing to the Andrew Consortium. We were looking not only to make more of our documentation accessible to the computer public, but also to ensure that it remains affordable for the average user.

The Andrew Consortium will be one of the first merchants offering wares over the Internet via NetBill. You can expect to see our popular *User's Guide to the Andrew User Interface System* available via NetBill very soon. Traditionally, the consortium has sold this document in hard copy form only, and only upon receipt of a check to cover its cost. Now, we will be able to offer users parts of the guide, or the whole thing, via computer. This should be particularly intriguing to our many Andrew users outside the United States who have had difficulty obtaining the guide. NetBill will now serve as the "credit card" payment conduit for these and other users. Carnegie Mellon University and Visa have formed a partnership to develop and conduct the pilot project for NetBill.

The *User's Guide* offering via NetBill will be followed by the availability of Andrew Documentation Manuals for Users, Programmers, Developers and Administrators over the web. And NetBill is not just reserved for textual documents--the consortium will consider offering all or part of the Andrew source code via this innovative service.

For those of you interested in the finer points of NetBill technology, the protocol ensures that both the consumer and merchant are protected: the consumer is guaranteed the certified delivery of goods before payment is processed, and the merchant is guaranteed that the consumer cannot access the goods until payment has been received. NetBill acts as a third party to provide the authentication, account management, transaction processing, billing, and reporting services for network-based clients and users. With a NetBill account and client software, users can buy information, software, CPU cycles, or other services from NetBill-authorized service providers, under a variety of payment schemes. NetBill acts like an electronic debit card service to provide financial services in support of electronic commerce. At present, NetBill operates only with the Netscape browser.

NetBill's home page can be found at *<http://www.ini.cmu.edu/NETBILL>*. Your comments regarding the consortium's documentation plans and NetBill are warmly welcomed. Please send email to *<info-andrew@andrew.cmu.edu>* to join in on the discussion.

Published Papers on the Web

AnnMarie Zanger, Assistant Director

Coinciding nicely with the documentation project is our increasing use of the web to reach both users and potential users. We want to increase access to everything ever published about Andrew by adding pointers to more of it on our web page.

We began with the inclusion of Terry Gliedt's *Linux Journal* articles written in 1994 about the ***Andrew User Interface System (AUIS)***. These articles offer some of the best start-up information for Andrew beginners, and so, are highlighted at the top of our web page. Advanced users will also find straightforward hints on how to take greater advantage of the system.

The articles are titled:

EZ - As a Word Processor
EZ - for the Programmer
Messages - a Multi-Media Mailer
Making the Most of Andrew

The papers contain a number of illustrations. They are available in their original format using *ez*, of course, as well as in 'ta 8n `Postscript`, ready for printing. They reside in the first section of the Andrew Consortium web page entitled "What is Andrew". The web address is:

http://www.cs.cmu.edu/˜AUIS.

Of course, the articles can still be retrieved via anonymous FTP from:

ftp.andrew.cmu.edu in ***pub/AUIS/PAPERS/atk/Gliedt**** *(EZ files)*
ftp.andrew.cmu.edu in ***pub/AUIS/PAPERS/ps/Gliedt**** *(Postscript files)*

Our plan is to feature more Andrew publications on the web soon, whether it be via NetBill or via the consortium's web page. There is, for example, a link to the Andrew Papers Archive on our web page. It features articles published from 1985 to the present. The writings are authored by the original developers of the system, by experienced Andrew users, and by presenters at Andrew Technical Conferences during the 1990s. We hope that these documents will help new users to become more familiar and experienced users to become more proficient with the system.

Consortium News

AnnMarie Zanger, Assistant Director

Staffer Moves to Pittsburgh Supercomputing Center Susan Straub, our Research Systems Analyst at the Andrew Consortium, is working on bigger computers these days. She has officially transferred to the Pittsburgh Supercomputing Center (PSC), a joint operation of the University of Pittsburgh and Carnegie Mellon University together with Westinghouse Electric Corporation. The PSC provides leading-edge computational resources to the national community and Susan is helping to administer the huge databanks of information involved in offering these services.

Susan started working at Carnegie Mellon during the mid-1980s when the Andrew project first began and she was here when the consortium first opened its doors in 1991. In her own words...

> *Well, it's time to say farewell. After 13 years of Andrew, I'm finally moving on. I have accepted a position with the Pittsburgh Supercomputing Center here on CMU's campus.*
>
> *I officially don't start at PSC until the middle of June but since I am taking a few weeks off to chill between the move, DON'T EVEN THINK OF SENDING ME ANY MORE INFO-ANDREW RELATED MAIL !!! :-) Please direct all such mail to either info-andrew or info-andrew-request@andrew.cmu.edu where the consortium staff can handle it. I will still subscribe to info-andrew and chip in on discussions when I can be helpful.*
>
> *It's been great getting to know everyone involved with Andrew. Hope our net connections cross again someday. -Susan Straub*

FACTS ON FILE

Andrew is...

Compound Document Architecture
Word Processor
Drawing Editor
Mail /Bulletin Board Reader, Writer, Manager
Spreadsheet / Table Editor
Widget Set
Application Builder
Scriptable
In C and C++
For X11

...With a consistent, integrated user interface so you can create compound documents containing pictures, words, tables, graphs

...and more.

The ***Andrew User Interface System*** is an integrated set of tools that allow you to create, use, and mail documents and applications containing typographically formatted text and embedded objects. ***AUIS*** or ***"Andrew"*** has three principal components:

> The ***Andrew User Environment (AUE)*** is an integrated set of applications beginning with a 'generic object' editor (*ez*), a help system, a system monitoring tool (*console*), an editor-based shell interface (*typescript*), and support for printing multi-media documents.
>
> The ***Andrew Toolkit (ATK)*** is a portable user-interface toolkit. It provides a dynamically-loadable, object-oriented environment wherein objects can be embedded in one-another. Thus, one could edit text that contains not only fonts and styles, but also embedded raster images, spreadsheets, drawing editors, equations, simple animations, etc. These embedded objects could themselves contain other objects, including text. ATK is an open system so programmers can create new objects that can be embedded as easily as those system-defined objects.
>
> The ***Andrew Message System (AMS)*** provides a multi-media interface to mail and bulletin-boards. AMS supports several mail management strategies and implements many advanced features including authentication, return receipts, automatic sorting of mail, vote collection and tabulation, enclosures, audit trails of related messages, and subscription management. It also provides a variety of interfaces that support ttys and low-function personal computers in addition to the high-function workstations.

Andrew-Ready Platforms

Andrew7.5 in C++ is available in binary form for these platforms:

IBM RS/6000& POWER/PC---AIX3.2

SUN SparcStation---SunOS 4.1.3& Solaris 2.4

DEC PMAX---Ultrix 4.3

Hewlett-Packard HP 720---HPUX 9.0

Intel x86---Linux (Redhat & Slackware)

The Andrew6.3 source in C has been used successfully on even more platforms. Try it on yours.

Remote Demo Service

Try out Andrew from your own work station via the Remote Andrew Demo Service. You will need a host machine on the Internet running the X11 window system. You will be able to compose multimedia documents, navigate through the interactive Andrew Tour, and use the Andrew Message System to browse through a few of CMU’s four thousand bulletin boards and newsgroups.

To get started, simply run the following command on your machine: finger @atk.cs.cmu.edu (128.2.203.218). The remote demo system will give you further instructions.

Accessing the Source Code and Binary Distribution Packages

Sources and binaries are available online from the Andrew Consortium web page at http://www.cs.cmu.edu/~AUIS.

They can also be accessed online via anonymous ftp from: ftp.andrew.cmu.edu (IP: 128.2.232.154) in pub/AUIS/. See the README file. Other ftp sites are: ftp.x.org (IP: 192.112.44.100) and its clone sites (see pub/R6untarred/contrib/lib/auis-6.3). On the nationwide AFS file system, Andrew is available in: /afs/cs.cmu.edu/project/atk-ftp.

Source and binary tapes are also available by mail for a nominal fee (see "Services and Offerings-Andrew on Tape" below).

Membership in the Andrew Consortium

The School of Computer Science at Carnegie Mellon University has established the Andrew Consortium to maintain and enhance the Andrew User Interface System (Andrew).

The consortium offers outside organizations the opportunity to help shape the future of the system. Participate in the development of Andrew, utilize the latest advances by our technical staff, and undertake commercial exploitation with the active cooperation of the developers.

The overall efforts of the consortium staff are directed toward:

+ increased quality in existing media,
+ enhancements, including a direct manipulation interface builder,
+ embedding of applications such as generic X applications,
+ increased potential for transition from Andrew to successor systems
+ inter-operability with standards such as Posix, Motif, C++, OLE, and SGML.

The consortium makes its most up-to-date release, currently Andrew 7 in C++, available only to members. The current publicly available Andrew release is 6.3, released via anonymous file transfer over the Internet.

Membership in the consortium is offered to organizations interested in exploiting Andrew technology within their operations or products. All members support the consortium as it:

+ Enhances, maintains, and distributes the Andrew software base.
+ Conducts an annual meeting to review progress and set priorities.
+ Distributes a quarterly newsletter
+ Monitors the info-andrew mailing list.

We offer memberships at four levels: Participating, Full, Contributing and Associate. You are cordially invited to join us.

Please contact our Director, Fred Hansen <wjh@andrew.cmu.edu> if you would like to discuss the opportunities that the consortium has to offer.

Consortium Services and Offerings

The following materials are provided by the Andrew Consortium at Carnegie Mellon University for internal educational use only and may not be reproduced for sale or distribution. Please mark your selections below:

ANDREW IN PRINT

_____ **The Andrew User Guide** US$25

This printed and bound guide, offers a comprehensive description of how to use Andrew applications and insets. Chapters cover ez, help, typescript, messages, console, raster, figure, table, and many other facets of the system. (130 pages)

_____ **Selected Technical Papers on Andrew** US$30

This set represents a selection of some of our most handy references on the Andrew system. (250 pages)

A Guide to Andrew (User Tutorial)
Ness: An Extension Language for the Andrew Toolkit
Programming with the Andrew Toolkit
ADEW: The Andrew Development Environment Workbench
Createinset: Generate Source Files for a New Inset
The Andrew Message System

_____ **Andrew Technical Conference Proceedings** US$20

The Andrew Consortium sponsors its own technical conference each year. The proceeding papers from the 1993, 1994 and 1995 events explore topics such as: HTML Editors, Widgets, Application Developer's View of Andrew, Smart Styles, Web Browser, Compound Document Architectures. (85 pages)

_____ **Programming Documentation on Andrew** US$95

This package represents a complete set of programming documentation on the Andrew system, sold in hard copy form. (1250 pages)

ANDREW ON TAPE

_____ **Binary Distribution Package (Andrew7.5 in C++)** US$125

This tape provides you with everything you need to get Andrew up and running on your RS/6000, Sun 4C Sparcstation, Sun Solaris, HP 720, DEC Pmax or Linux machine.

If you are ordering ANDREW ON TAPE, please specify format:

_____ 1/4" streaming tape (150 MB)
_____ 8 mm DAT tape (2.3 GB)
_____ 8 mm HP Iotamat format

US$ _______SUBTOTAL

_______ Add US$20 per item for US express mail delivery
_______ Add US$25 per item for air mail delivery outside the US
_______ Add US$40 per item for express mail delivery outside the US

US$ _______GRAND TOTAL

Name ____
Company ____
Address ____
Phone _______________ Fax _____________ Email ________________

Please place your order by mailing the previous section of this form with your selections marked. Include a check made payable to Carnegie Mellon University and send it to the address overleaf.

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discussion forum --- info-andrew@andrew.cmu.edu

Newsgroup: comp.soft-sys.andrew

Demo: finger @atk.cs.cmu.edu

Access: ftp.andrew.cmu.edu: pub/AUIS/

Web: http://www.cs.cmu.edu/~AUIS