macGIS Puts UO Programmer on the Map

Kit Larsen

A cutout paper sandpiper peers down over the top corner of Kit Larsen's computer screen. The walls of his office are covered with pictures of Oregon birds—avocets, bitterns, mountain bluebirds—evidence of a longtime Audubon Society affiliation. His desk is strewn with papers, heavily annotated colored-pencil drawings of topographic maps that look like interesting doodles by Paul Klee. And dangling from one corner of a bookshelf is a small plastic-laminated souvenir from Novozybkov...

Novozybkov?!

The story of how this obscure Russian icon found a home in a systems analyst's office in Eugene goes back twelve years, when Larsen helped organize the UO's first annual Computer Graphics Conference. At the time, he had no idea he was embarking on an international odyssey. But out of that experience evolved a long and fruitful collaboration with the UO's Architecture and Allied Arts department, resulting in a software package that has recently attracted worldwide attention.

Larsen, a systems analyst at the UO Computing Center, is the computing brains behind *macGIS*, a geographic mapping system for the Macintosh. The software was conceived five years ago, when he first discussed the concept with David Hulse, UO assistant professor of landscape architecture. Utilizing Larsen's programming skills, the two developed a package that was a useful teaching tool for Hulse's geographic systems classes. And so it might have remained, had not a series of serendipitous events made *macGIS* a star.

A faculty exchange with Moscow State University in 1991 brought *macGIS* to the attention of Gennady Yagodin, then minister of education in Gorbachev's cabinet. In the flurry that followed, the Larsen-Hulse program became the centerpiece in a project to measure radiation hazards in an area near Chernobyl, site of the 1986 nuclear disaster. With grants from the MacArthur Foundation and Apple Computer, as well as funding from the Gorbachev and Yeltsin governments, the joint Russia/U.S. project was launched in June, 1992. Now Larsen employs two students to help with the programming, and the U.S. research team has swelled to include John Baldwin, UO professor of planning, public policy and management, and UC Irvine's Mike Hamilton, a biologist with expertise in compiling data banks of information about plants and animals.

Last August, Larsen flew to Washington, D.C., to present a paper on the burgeoning applications of *macGIS* to an international conference entitled *Mapping and Measuring Global Change*. Later that month, he accompanied Hulse, Baldwin, and Hamilton to Russia, where they met with Russian scientists and educators. Their goal is to establish two major

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information centers, one in Moscow and one in Bryansk, which will house computer systems designed to make scientific information about Chernobyl hazards available to the general public.

Utilizing Mac LC II's running HyperCard, *macGIS*, and a radiation dosage forecasting model, the centers are intended to make data about radiation risks in the food chain easily understandable to the average person. Data is being collected on local geography and geology, farming practices, farm animals, and human populations. It is then translated into vivid, color-coded computer maps identifying the affected areas. Ideally, local farmers could easily locate their farms on these maps and quickly calculate the present—and future—contamination levels of a given crop. They could also obtain information on how to minimize health risks through growing techniques and food preparation.

How does Larsen feel about all this? Understandably, he's excited and still can't quite believe all that's happened himself. "It's one thing to sit in your office, solving problems on a computer screen, and quite another to realize that what you're doing could meaningfully affect people's lives," he marvels. Larsen says he would be "really happy" if the project is able to help people.

At the moment, Kit is wrapping up his end

... Larsen, continued

of the Chernobyl project, refining radiation-dose forecasting software sent over the Internet by the Russian team. The software was originally written in FORTRAN, and it's Kit's job to integrate it into the Macintosh environment and the HyperCard interface, a task which he hopes to complete by the end of March.

And after that? It looks like this still might be only the beginning of the story. Last fall, HarperCollins published *macGIS 2.0*, which packages the software with a user's manual written by Larsen and Hulse. Articles mentioning *macGIS* are popping up in recent issues of the Harvard University newsletter and MacWorld magazine. It's apparent that the program has important applications for architects, geologists, urban planners, environmental researchers of all kinds. The next time you visit Kit Larsen's office, look around. Chances are, the little souvenir from Novozybkov will have been joined by mementos from many other corners of the globe—corners illuminated by *macGIS*.

WHAT'S NEW ??

••• for mac users •••

Apple Modem Tool Upgraded

The Network Services staff recently installed the latest version of Apple Modem Tool (1.1.1) in the "Network Software: Dialin Support" folder. If you use Eudora over a modem connection, the staff recommends that you upgrade to the new version.

Apple Modem Tool (AMT) plays the same role for some modem-using applications as printer drivers do for word processors and other printer-using applications. If you have other applications which make use of the Apple Modem Tool you may also wish to upgrade.

To install the new version, drag it on top of your system folder icon and let the Finder do the rest. If you're still using some version of System 6.0 and have installed Communications Tool-box, replace the Apple Modem Tool in your Communications Toolbox folder.

For information about installing Com-munications Toolbox, see the Read Me (UO) document in the folder titled, "Mail Clients: Eudora 1.3: Eudora over a modem."

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ARA Links Macs to UOnet

If you have a Macintosh at home, you may now tap into UOnet and run network software using AppleTalk Remote Access (ARA) software. With ARA, you can browse on-campus AppleShare file servers or print on a campus laser printer, run NCSA Telnet, Eudora, TurboGopher, and Fetch—even perform several of these actions simultaneously, all from the comfort of your home.

To use ARA, you must have a Macintosh running System 7, a high-speed modem (preferably, 14400 bps v.32bis), appropriate network software (MacTCP, NCSA Telnet, etc.), and an ARA server to call. The Computing Center now provides the servers, a pool of four V.32bis modems. Set your ARA software to dial 346-1481 to access the server and UOnet.

ARA software may be purchased through the Microcomputer Purchase Plan. Check with the Microcomputer Services Center in Room 202 for details.

Further information about ARA is available on the Mac CC Public Domain file server in the "Network Software: Dialin Support" folder. If you need assistance setting up an ARA connection, contact Network Services (phone: 346-4395; e-mail:

nethelp@ns.uoregon.edu).

Official Eudora 1.3

The official release of Eudora 1.3 is now available for copying in the CC Public Domain library. Eudora 1.3 supersedes version 1.3b34, its unofficial predecessor.

The Computing Center staff recommends that all Eudora users install this new version in lieu of earlier releases. You'll find it in the "Network Software: Mail Clients" folder.

Version 1.3 provides numerous changes and bug fixes to its official predecessor, Eudora 1.2. Its biggest differences from v.1.3b34 are significant enhancement of the Nicknames feature and improved handling of low memory conditions.

If you're using Eudora over a modem, you'll also benefit by upgrading to Apple Modem Tool 1.1.1, as described in the article, "Apple Modem Tool Upgraded," in this issue.

For more information on Eudora 1.3, read the "1.3 Changes" and "Release Notes" documents in the Eudora 1.3 folder. A new, 127-page manual is also available for reading or copying in the Center Documents Room (205) for those who wish to explore version 1.3's new features in more detail.

apple open house

Microcomputer Support Center
Room 202 Computing Center
Wednesday, February 17
10 am - 2 pm

Apple representatives will demonstrate and answer questions about new Apple products—desktop CPUs, color Powerbook, new LaserWriters, color printer, color scanner

network notes

UO May Drop BITNET

The UO is considering dropping its BITNET membership as of summer 1993. Before a final decision is made, the Computing Center's Network Services staff is soliciting your input.

The termination of the University's BITNET connection does not mean the loss of external network access. The University will continue to retain its connection to the Internet, which offers functions equivalent to BITNET, through NorthWestNet. Electronic mail to and from BITNET sites and subscribers would continue to be routed via Internet gateways. Most users would notice little or no change—with a few notable exceptions:

- For mail to reach you, you would need to alert your BITNET correspondents and LISTSERV lists to address you differently, using the full domain-style address (e.g., *jqj@oregon.uoregon.edu* instead of simply *jqj@oregon*)

- LISTSERV commands like SUBSCRIBE would have to be done via e-mail rather than using the SEND command.

- The SEND/FILE and RECEIVE facilities would no longer be available to transfer files between the VAXcluster and BITNET sites. However, FTP and other file transfer methods would still be available.

We need to know as soon as possible if this change would create other, perhaps unacceptable, inconveniences for members of the UO community. If you have comments on the proposed change, please call JQ Johnson at 346-1746 by March 1993.

No More MacIP Support

Stanford University recently announced that it is withdrawing support and future development of its terminal emulation program, MacIP. While MacIP will continue to be available at the UO, the Computing Center staff recommends that MacIP users consider converting to NCSA Telnet to log in on remote hosts.

New NWnet Connection

NorthWestNet (NWnet) is the UO's direct link to the Internet and the outside world of network computing resources. The Computing Center's Network Services group recently completed a major upgrade of the University's connection to NWnet. The new T1 connection is approximately 24 times faster than its 56,000-bit-per-second predecessor, bypassing several former stopping points on its path. Users of popular Internet services, such as Telnet and FTP, should notice marked improvements in performance.

NCSA Telnet Upgrade Alters Terminal Emulation

The Computing Center's Network Services group is now distributing version 2.5 of the NCSA Telnet terminal emulation utility. It is available for copying from the Network Software folder in the CC Public Domain library on UOnet.

Users who install version 2.5 will notice some changes. While earlier versions of Telnet emulate a VT102 terminal, the new version emulates *either* a VT102 or a VT200, depending on the type of Mac keyboard being used. For standard ADB and Plus keyboards, Telnet emulates a VT102, by default; for extended ADB keyboards, it's a VT200.

If you have an extended keyboard and customarily use your keypad to send special commands to programs like BANNER or the VAX's EVE and EDT editors, you'll find that things don't work quite the way they used to when you upgrade to the new version. For most people in this situation, the recommended solution is to force Telnet to emulate a VT102 rather than a VT200. To do this, you'll need to replace your existing *config.tel* file with the one you'll find in the NCSA Telnet 2.5 folder in the CC Public Domain library.

For more detailed information on terminal emulation, see the "NCSA 2.5 Terminal Emulation" document in the Telnet 2.5 folder. Printed copies of this document are available in the Computing Center Documents Room (205).

VAX Network Software Changes

In mid-January, the Computing Center's systems staff replaced the VAXcluster's Internet software package, WIN/TCP, with another package called *MultiNet*, gaining more functionality for less money. On the whole, the differences between the two packages are so minor that some users may have made the transition without even knowing it. We've listed notable changes below. If you notice anything else that seems unusual in your network activities, please report it via e-mail to username *system*.

- *FTP* - Works the same, except there is no VMS command to escape back to VMS. However, you can use the SPAWN command to temporarily leave FTP and perform an action at the VMS level.

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VAX Network Software, continued

- *TELNET* - Works the same, except there is no OPEN command. However, the CONNECT command or just the host name provide the same function. Terminal-type negotiation is somewhat smoother under MultiNet.

- *WHOIS Server* - No longer available on OREGON. You may need to update your microcomputer or workstation configuration to access the UOnet server WHOIS.UOREGON.EDU instead.

- *FINGER* - Works the same, except to list only those users on the VAXcluster node you're logged in on (e.g., OREGON only), you must include a /NOCLUSTER switch in the FINGER command:

   $ finger/nocluster *username*

- *HELP* - For online help with MultiNet, type

   $ help @multinet *topic*

   identifying a topic. Omit the topic to display a list of topics.

- *PH* - Not available with MultiNet.

- *TN3270* - There is no separate TN3270 command. Instead, TELNET switches into 3270 mode based on terminal-type negotiation. Key mapping also differs.

- *"Administrative" Commands* - have a MULTINET prefix, e.g.,
   $ multinet nslookup
   $ multinet ping
   $ multinet show (equivalent to netstat)

- *NETECHO, NETTIME, RUPTIME, RWHO* - No equivalents under Multinet

- *VMS-style Qualifiers* replace WIN/TCP's UNIX-style qualifiers. For example, you'd type

telnet *host/port=port* instead of telnet *host port*
whois/host=*host*   instead of whois -h*host*
rcp *host::file* etc.   instead of rcp *host:file* etc.

- *Domain Name Server* - No longer available on OREGON. If your microcomputer is suddenly unable to resolve host names, an old configuration file may be specifying OREGON. Change your configuration to specify PHLOEM.UOREGON.EDU as the primary name server.

- *DECwindows Transport* - Specify TCPIP rather than WINTCP when using a UNIX workstation or X terminal as a display server with a VAX client application, e.g.,

$set display/create/node=*node* transport=tcpip

- *Mac File Transfers* - Network Services staff recommends using Fetch instead of FTP for file transfers on networked Macintoshes. Mac NCSA Telnet users who run VAX FTP to connect back to their Macs may notice some changes in the software. See the System NOTICES and NCSA Telnet documentation for details.

For more information on MultiNet's features, display online help files, as noted above, or consult the MultiNet manuals in the Computing Center Documents Room (205).

WINTER WORKSHOP SCHEDULE

University Computing's Winter Term computing workshops are continuing through February. These non-credit workshops are open free of charge to UO faculty, staff, and students. Pre-registration is required for all courses. To register for the Eudora e-mail workshop, call Fran at 346-1714, or send e-mail to fran@oregon. To register for all other classes, call 346-4412.

Topic	Workshop	Day/Date	Time	Room
Macintosh	Advanced Mac	Fri Feb 19	10:30am-12:30pm	B13 Klamath, Lab A
Public Domain	Mac Session	Tues Feb 16	9:00am-11:00am	185 Comp Ctr
WordPerfect	Merging and Sorting	Tues Feb 23	2:00pm-4:00pm	165 Comp Ctr
E-Mail	Using E-Mail on Your Mac with Eudora	Wed Feb 24	3:30pm-5:00pm	Chiles Mac Lab

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