Early GRASS Community Views on FOSS

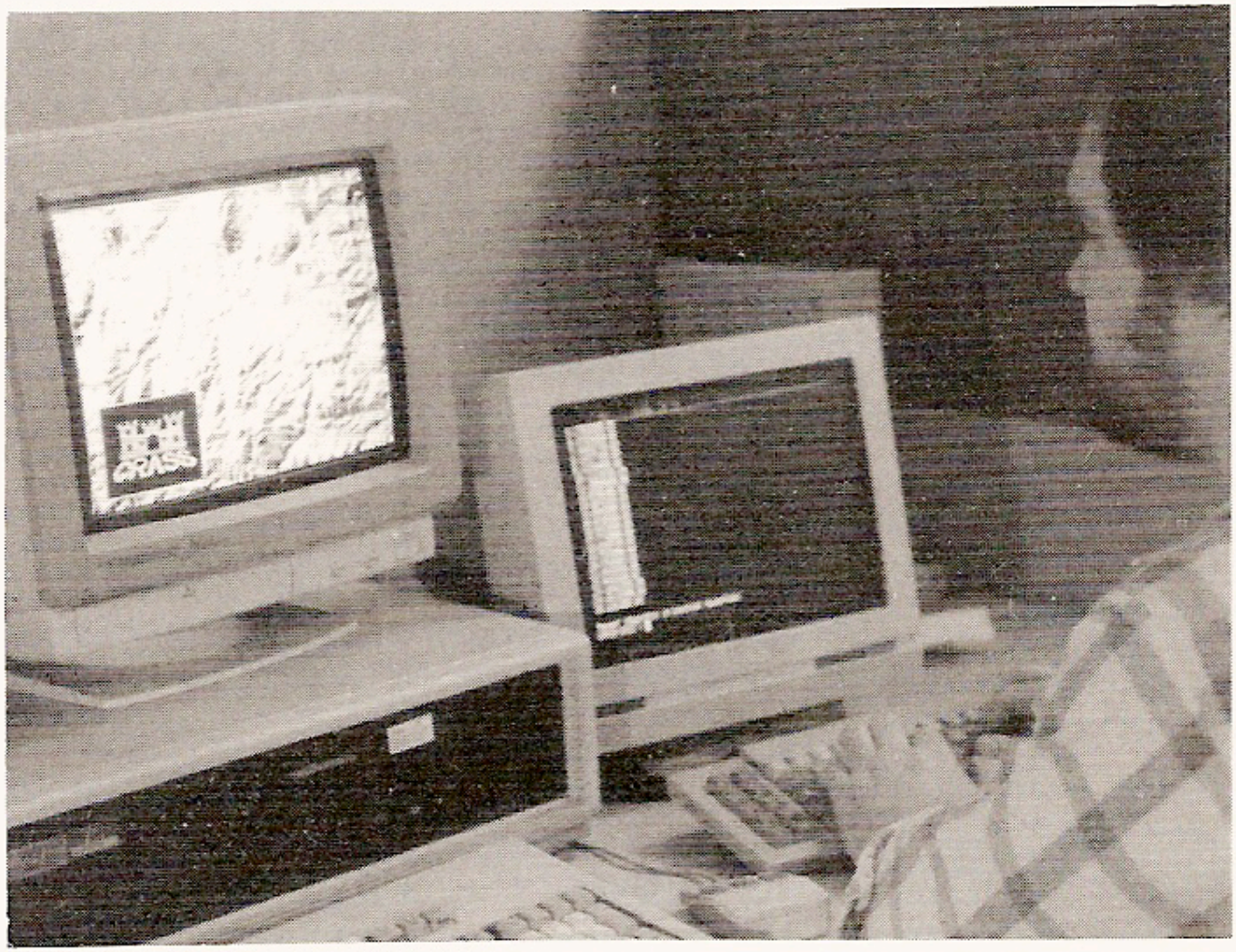
Jim Westervelt

with views from: William (Bill) Goran, Michael Shaprio, L. Van Warren, Chris Rewerts, David Gerdes, and W. Fred Limp

How Old is GRASS?

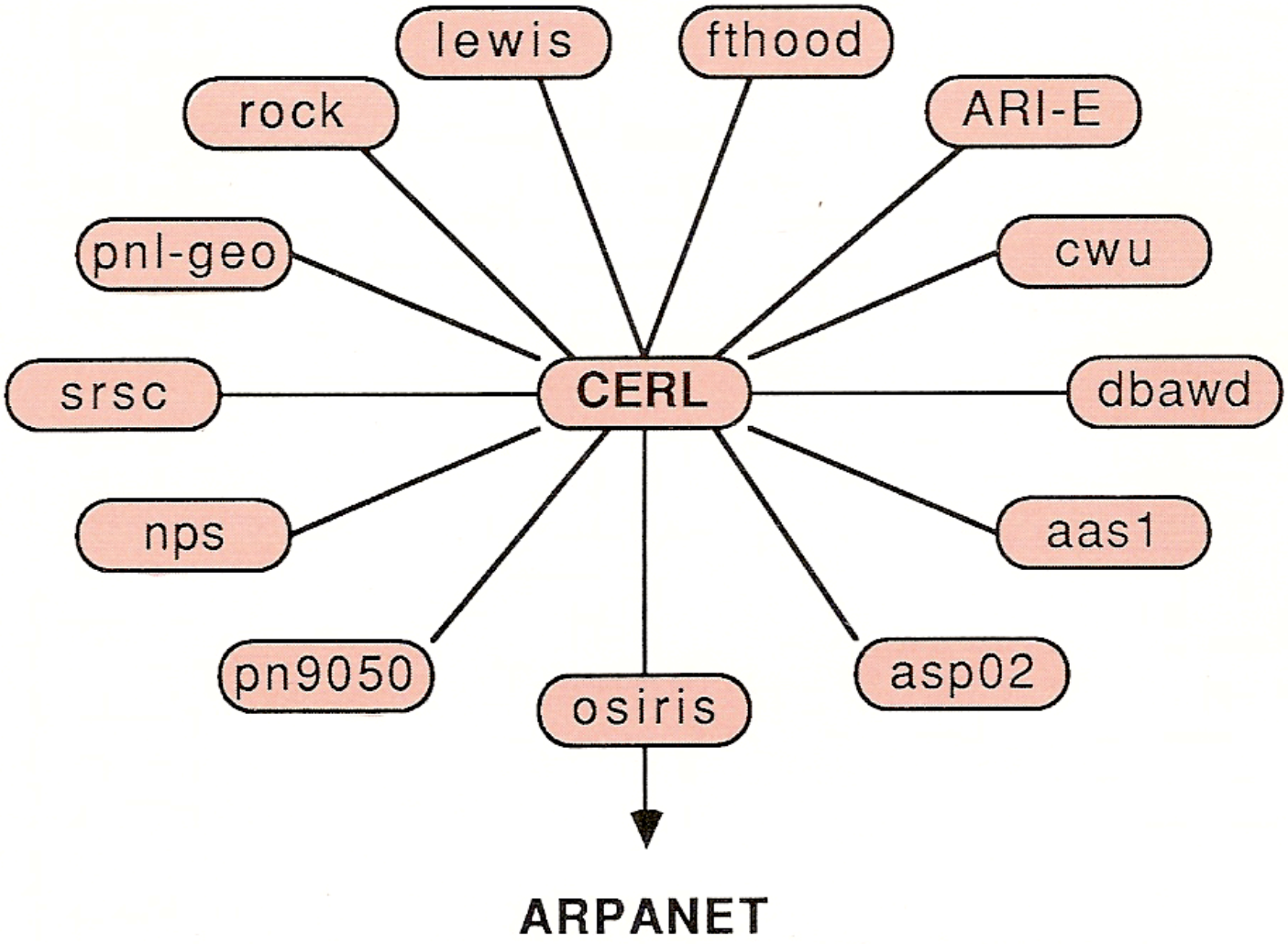
- A Look at Some Evidence …

Panel #: 1 of 2



GRASS programmer Dave Gerdes of USA-CERL sits at a Compaq 386, a machine to which he recently ported GRASS 3.0.

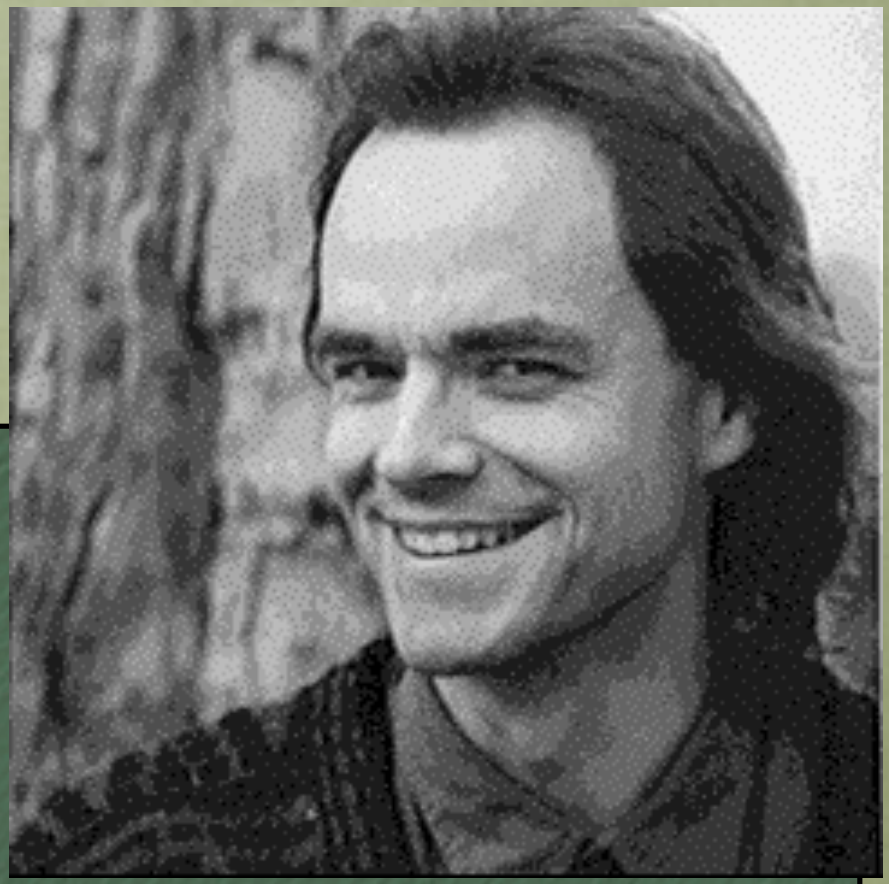
Below is the current configuration of GRASSNET. For more info, contact Kathy (Norman) Pecknold at (217) 352-6511 x447 or cerl\!norman.



The Questions …

- Was it appropriate to release GRASS into the public domain?
- Should GRASS have been transitioned into a commercial product?
- Would it have been successful?
- Why didn't any of the early developers attempt to commercialize GRASS?

L. Van Warren



r.combine

```
(NAME good.place
      (AND
            (OR
                  (GROUP 1 2 5 (geology))
                  (GROUP 1-5 (elevation))
            )
            (NOT
                  (GROUP 1-4 (landuse))
            )
      )
)
```

http://www.wdv.com

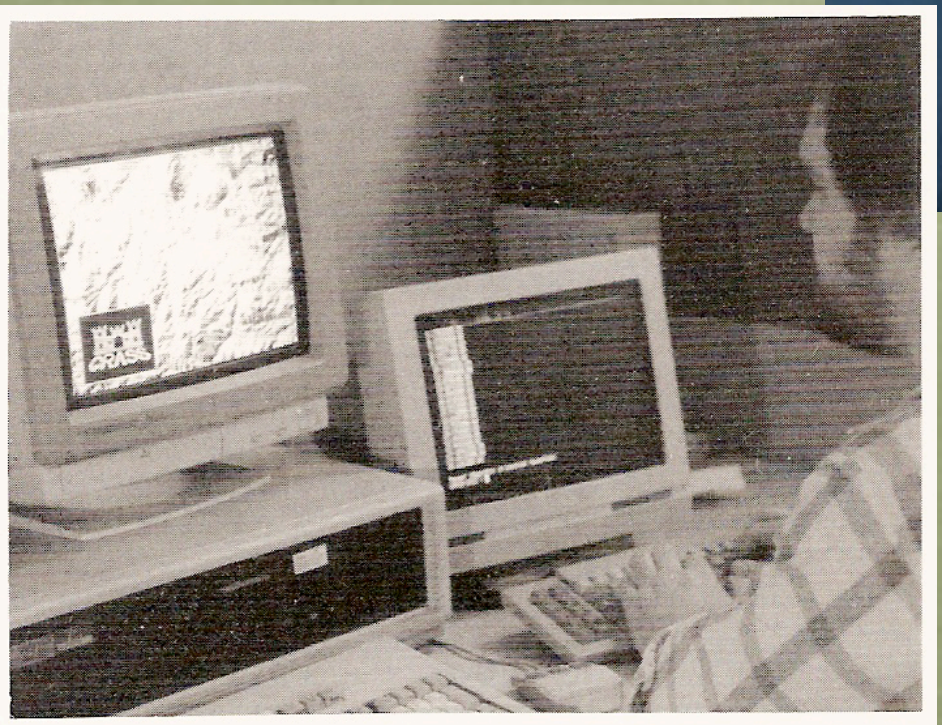
http://secretgene.com

You type in any disease rare or common and it tells you where the experts are and the portals for treatment.

Dr. Fred Limp

The Open GRASS Foundation
Center for Remote Sensing
Boston University
725 Commonwealth Ave.,
Boston MA 02215
617-353-5642

David Gerdes



GRASS programmer Dave Gerdes of USA-CERL sits at a Compaq 386, a machine to which he recently ported GRASS 3.0.

Redeveloped the v. suite
Initiated the GL based
3D Vis projects
Ported GRASS

Chris Rewerts

Encountered GRASS as PhD student

Assisted professor to use GRASS as teaching tool

Wrote d.rast.xxx programs

Wrote r.answers

"I was relieved that my coding was acceptable, but also please that I could contribute back to a collective resource from which I had benefited."

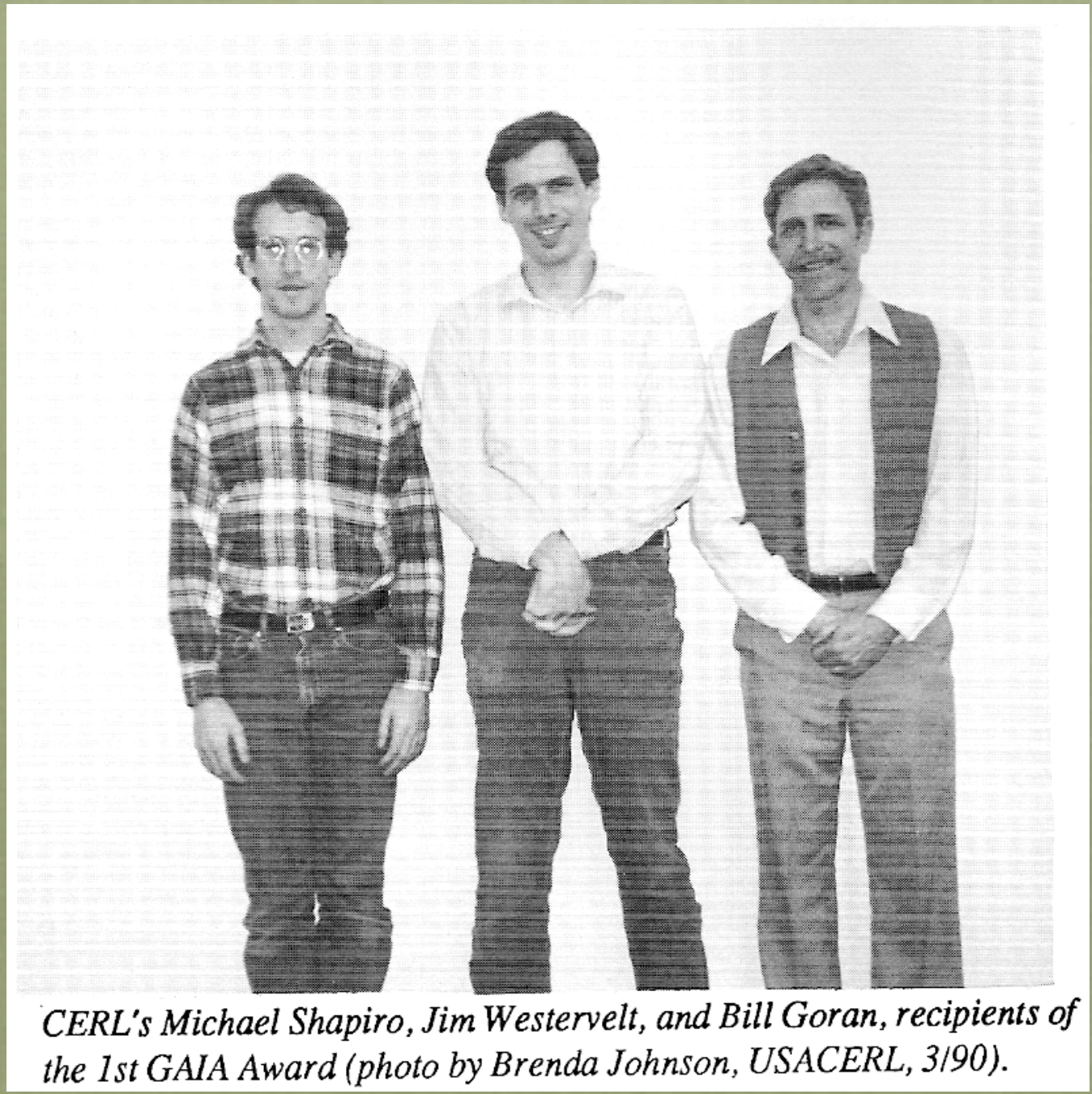
A survey of open source developers
http://www.stanford.edu/group/floss-us/stats/

The Magic Cauldron
http://www.catb.org/~esr/writings/magic-cauldron/magic-cauldron.html

http://www.gnu.org/philosophy/motivation.html

http://www.informit.com/articles/article.asp?p=420287&seqNum=2&rl=1

http://portal.acm.org/citation.cfm?id=776867&dl=GUIDE&coll=GUIDE



CERL's Michael Shapiro, Jim Westervelt, and Bill Goran, recipients of the 1st GAIA Award (photo by Brenda Johnson, USACERL, 3/90).

Michael Shapiro

GRASS lead programmer

i. commands

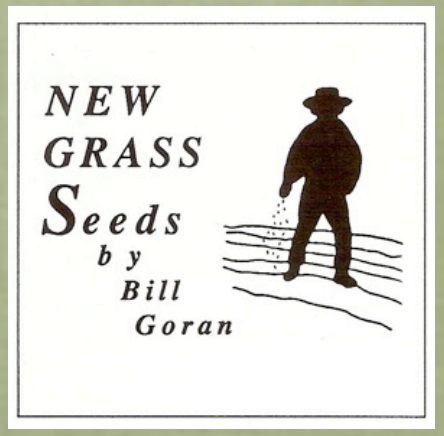
GRASS libraries

programmer's manual

r.mapcalc

many other commands

William Goran



Bill Goran, Jim Westervelt, and Marilyn Ruiz in USA-CERL's Map Lab, examining data on an NHAP photo to be used GRASS data base development (photo by Wilmer Zehr, 1987).

Managed the entire GRASS effort at CERL

Created and managed the GRASS Inter-Agency Steering Committee

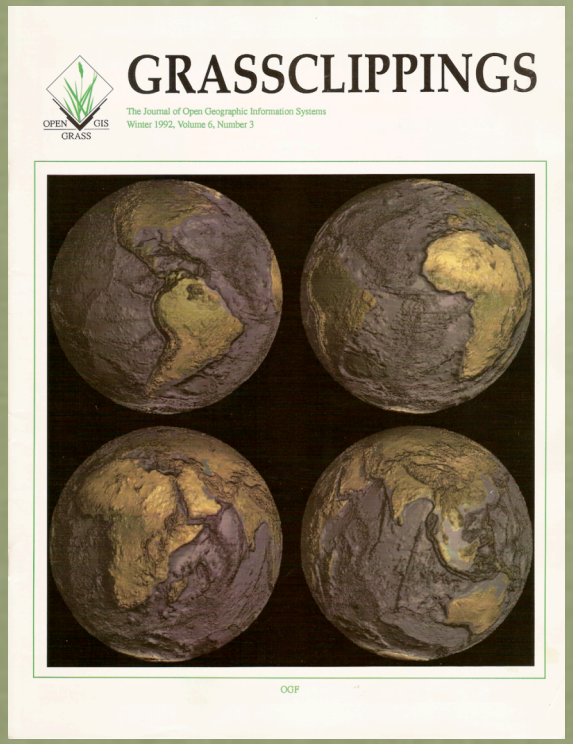
Managed the relationships with other government and commercial organizations.

Oversaw the transition of GRASS to OGF, the Open GRASS Consortium

Sample Transitions

- Open GRASS Foundation
- LAS and Global Geoinformatics

GRASS Transitioned to OGF



GRASSCLIPPINGS

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Departments

GREETINGS FROM THE OPEN GRASS FOUNDATION

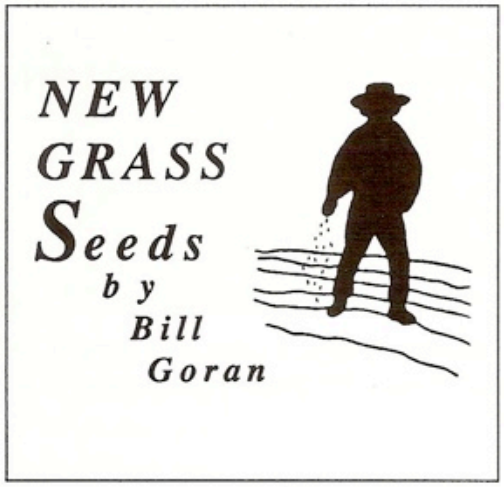
The Open GRASS Foundation (OGF) inherits the short but rich tradition of the *GRASS* Inter-Agency Steering Committee (GIASC) and the *GRASS* GIS User Forum (GGUF). In this first OGF issue of *GRASSCLIPPINGS*, we wish to show our intention to continue working in that tradition and to create an even more active forum for the exchange of ideas and information vital to the development of the *GRASS* community and the cause of open Geographic Information Systems (GISs).

OGF came into existence because many people in the GIS community believe profoundly that *GRASS* represents a major trend in the use of software resources. *GRASS* is an open, free development system, available in source code form, and already widely used by end-users and GIS software vendors alike. It is very close to becoming a GIS software common-denominator because of its extensive source-level integration with other software tools and applications and because of its broad acceptance in universities as a resource in both teaching and development. Like *UNIX* in the 1980's, *GRASS* has "caught on" and, driven by enthusiasm and a pure creative energy, it has begun to set a standard for the open GIS development environment. Researchers and business people alike are beginning to feel that resources like *GRASS* provide the basic tools for GIS development and, in times like these, nothing could make more sense either from a financial or technical point of view. This is the message we hope to convey in the current and future issues of *GRASSCLIPPINGS*! We intend to catalog the technical developments of the *GRASS* community and to promote awareness of the extent and quality of *GRASS*-based application systems successfully installed both nationally and internationally.

OGF is concerned with ideas; therefore, we will focus significant resources on making *GRASSCLIPPINGS* a strong and disciplined voice on behalf of *GRASS*. OGF is also concerned with the commercial promotion of open GIS; hence, we will focus on the annual *GRASS* GIS Users' Conference and Exhibition and joint commercial ventures involving *GRASS*. The user meeting, like *GRASSCLIPPINGS*, will be an active demonstration of the state of open GIS. Through our combined, community-wide efforts, we will showcase a broad range of software integrations and *GRASS*-based application systems.

Although some of what you will read in these pages is new, much concerns ideas that have been brewing in the *GRASS* community for some time. What is definitely new, and what we wish to emphasize, is that the world of open GIS is beginning to come into its own, and is generating a creative and dynamic market force that will have to be reckoned with.

David Schell, Chairman, OGF



The Open GRASS Foundation: Advancing the Open GIS Concept

Over the last two years, the federal agencies that use and share *GRASS* GIS software have organized and formalized their joint efforts. A memorandum of understanding links agencies in a "commitment to cooperate" and ensures joint agency funding and staffing of an office dedicated to the goals of (1) enhancing, integrating, and releasing new versions of *GRASS* software and (2) using *GRASS* to facilitate data sharing and coordination among participating federal agencies. Located at the U.S. Army Construction Engineering Research Laboratories (USACERL) in Champaign, IL, The Office of GRASS Integration (OGI) began operation in October 1991 and is now preparing for the release of *GRASS* 4.1.

During this same period, and in part because of these federal coordination activities, the broader community that uses *GRASS* GIS software (when last surveyed, the *GRASS* community was almost equally split between government, educational, and private sectors) has also initiated organizing efforts. A user group organization (*GRASS: The User Forum*, or *GRASS TURF*) was established in 1990 to sponsor user meetings and discussion forums. During 1992, this community of users has evolved, with an active board of directors, into a broader organization now called *The Open GRASS Foundation* (OGF), of which TURF is a subset.

OGF now has two full time and two part time employees, with main offices at the Center for Remote Sensing at Boston University and a branch office in Champaign, IL. David Schell is the Executive Director of OGF, and Linda Roush is the Publications Editor. OGF seeks to serve all elements of the *GRASS* community of users and developers and to advance the concepts of open software systems, especially in the areas of geoprocessing and environmental modeling.

To ensure coordination between OGF and OGI, a Cooperative Research and Development Agreement (CRDA) has been drafted that will provide a framework for sharing resources and technical expertise to advance issues associated with the transfer of technology for federally-developed *GRASS* software. CRDA agreements, which were authorized in the 1986 Technology Transfer Act, provide a mechanism, across the federal government, to facilitate the use and distribution of federally developed technologies.

OGF provides an excellent private-sector complement to the federal agencies that participate in the *GRASS* Inter-Agency Coordinating Committee (GIACC), which coordinates OGI operations. While OGI is focused on serving the federal user community, OGF works with academia, the private sector, and state and local government organizations.

The federal agencies working with *GRASS* are very pleased to have OGF as a working partner. Together, OGI and OGF can more completely serve the entire *GRASS* GIS user and developer communities and work to advance the state-of-the-art in open GIS technology.

Conference Agenda and Listing of Abstracts

9th Annual GRASS/GIS Conference and Exhibition

A Forum for the Promotion of Open Geographic Information Systems

Hosted by: *Soil Conservation Service*

March 13-18, 1994

Reston, Virginia

OpenGIS

Sponsored by: *The Open GIS Foundation*

LAS

- Gilles Clemer
- GRASSLAND
- Tcl/Tk GRAS
- OGDI
- OGC member

- gc@globalgeo.
om

GRASS Activities at L.A.S., Inc., Montreal, Canada

by Gilles Clement

LAS Inc. has built itself a solid expertise around *GRASS* and has a vast experience in software development applied to scientific research, including geomatic (or GIS) and remote sensing. The firm employs over twenty professionals working on a variety of contracts for major Canadian government agencies, including Hydro-Quebec, Canadian Department of National Defense, Environment Canada, and Forestry Canada. Since its founding in 1989, LAS Inc. installed over 100 *GRASS* sites in Canada on various platforms like *Digital*, *Data General*, *Sun*, *Mips*, *Silicon Graphics Inc.*, and *Apple Macintosh*. The company has recently become a member of *The Open GRASS Foundation*.

One of the most outstanding realizations produced by LAS, Inc., is the Hydro-Quebec's GIS for landuse planning and regional development. This project, which took more than 10 years to produce, integrates information on landuse, transportation, hydrology, regional and municipal data, ecological and historical sites, and Hydro-Quebec's electricity network. This system will enable environmental researchers and engineers to better understand the territory associated with the setting and restoration of storage dams and electrical power lines.

Throughout one of Hydro-Quebec's research and development program, LAS Inc. developed a sophisticated graphical user interface. In opposition to the *XGRASS* work currently being done at USACERL, the interface is object-oriented. The user is guided in *GRASS* operations without a direct contact with the commands. In opposition to the CERL syntactical interfaces, the user does not have to call upon the basic commands to display, analyses, or manipulate data.

LAS, Inc. is also currently working with a Canadian native band (Attikamekw) on the different uses of *GRASS* for resource management and protection of wildlife habitat. This system will enable the beginning of a dialog between the different party using the resources that are vital for natives's traditional activities. For example, it will better enable planning for forestry interventions by taking into account the sensitive zones for wildlife habitat.

LAS Inc. was just awarded a contract from the Defense Research Establishment of Valcartier (DREV) in Canada to enhance *GRASS* display capabilities and to use an object-oriented DBMS with *GRASS*. These programs will attempt to cover all possibilities of optimization of the *GRASS* display capabilities and user interface, as well as data storage and retrieval, using object-oriented methodology.

In a recent meeting, held in Montreal, scientists from USACERL, Hydro-Quebec, DREV, and LAS, exchanged ideas of research avenues for *GRASS* and began a joint research and development effort.

Photo: From left to right: Philip Fortier, LAS; Alern Lavore, LAS; Jim Westervelt, USACERL; Valerie DesRoches, LAS; Kurt Buehler, USACERL; Sylvain Daigneault, HQ; Gilles Clement, LAS; Mare Parenteau, DREV; Guy Moisan, HQ; Dominic Roy, DREV; Pierre Cusson, HQ; Laurant Girouard, HQ; and Robert N. Cloutier, LAS.

Summary

- Was it appropriate to release GRASS into the public domain?
- Yes
- Should GRASS have been transitioned into a commercial product?
- Yes, no, and there have been some attempts
- Would it have been successful?
- Perhaps, but no tries have been successful yet.
- Why didn't any of the early developers attempt to commercialize GRASS?
- Not entrepreneurial
- Driven by different goals
  - ★ Need a job
  - ★ Successful software attracts future employers
  - ★ Public good
  - ★ Interesting work

P.S. Pieces of the Magic

Brilliant software developers

- Blue jean work ethic

A passion for the public good

- Contributing > getting rich
- Success through supporting the success of others

Inter-agency coordination

- Regular review of user needs and R&D plans

Regular releases with testing

- Continual sharing among programmers
- Stable annual releases for the rest of us

Passionate community

- Annual user meetings
- Fun, friends, kindred spirits