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ABSTRACT

The use of electronic communication in the 12 Title VI African Studies Centers is discussed, and the networks available for their use are reviewed. It is argued that the African Studies Centers should be on the cutting edge of contemporary electronic communication and that computer networks should be a fundamental aspect of their programs. An informal survey of center personnel and the Association of African Studies Programs and the African Studies Association has indicated that, while all the centers have word processing capabilities, only nine of the centers' administrators are hooked into their mainframe computer systems. Only the staff of the Wisconsin center are using any other networking systems. The numerous advantages of networking for the African Studies Centers include the possibility of direct network connections with African countries. Africanists have used the following four fundamental computer systems for research and extension: (1) Internet/Bitnet; (2) Fidonet; (3) Usenet; and (4) various bulletin board services. Features available for each of these systems are described. The four networks and the services they provide are fundamental tools for Africanists that should be readily available and extensively used. Appendixes include a list of international networks to Africa; a directory of African electronic mail addresses; and descriptions of Internet, NewsNet, Fidonet, and bulletin board features. (SLD)

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Electronic Communication:
Appropriate High Tech for African Studies

ED 364 229

COMPUTER NETWORKS AND AFRICAN STUDIES CENTERS

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Fidonet - kuntz 1:121/25.3

This paper argues that the twelve Title VI African Studies Centers (ASC) should be on the "cutting edge," of contemporary electronic communication, and that, in particular, the knowledge and use of computer networking technology should be a fundamental aspect of their computerized communication systems and educational program.

As federally funded research centers, charged with the promotion of teaching, research, and the dissemination of knowledge and learning about Africa to the wider public, these twelve centers have a pre-eminent role in African Studies. As such, they have a responsibility to promote the most up todate electronic communications at all levels of their activities. Not only should administrators be active users of computer technology and networks, but faculty, students, and affiliated teachers/citizens should also be computer and network literate.

Given the inevitability of computer technology, ASC administrators and faculty who are ignorant about computer technology, especially, computer networking, are doing a disservice to their careers and disciplines, their students, their university, and the nation in general. Indeed, computer networking illiteracy soon could be considered a type of academic "malpractice." ²

An informal survey, revealed that while all of the twelve center have and use in-house/on-campus computer word processing, only nine of the centers' administrators are hooked into their university's main frame computer system. This system is the basic hardware for networking. Of these nine, only Wisconsin staff or faculty are aware and use any other networking communication systems. This lack of networking capabilities significantly inhibits these centers from fulfilling their Higher Education Act, Title VI, mandate to promote research, teaching and public awareness about Africa.

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The Association of African Studies Programs (AASP) and the African Studies Association (ASA) are included in this survey since they too are the major focal points for African Studies in the U.S., and as such, also have an important need to be participants in both national and international networks. Table 1 compares the different university capabilities -- those known by the African Studies administrators.

Table 1
Networking Capabilities at the Title VI Centers

	Internet/Bitnet (E-mail)	Dis.Li st	Listsrv	FTP	Gopher	Telnet (ASC)	Fidonet	Usenet	BBS
AAS P	tah @psuvm.psu.edu	?	No	No	Yes	No	No	No	No
ASA	africa @emoryu1.cc.emory.edu	?	No	No	Yes	No	No	No	No
BU	No	No	amazigh-net @engcd.bu.edu	No	Yes	No	No	No	No
UC-B	?	?	No	?	Yes	?	No	No	No
UCL A	keller @polisci.sscnet.ucla.edu	?	No	?	Yes	?	No	No	No
CU	No	No	No	No	Yes	No	No	No	No
FL	africa @nervm.bitnet	?	No	No	Yes	No	No	No	No
IL	swisher @ux1.cso.uiuc.edu	?	?	?	Yes	?	No	No	No
IN	omeara @indiana.edu	?	No	No	Yes	No	No	No	No
MSU	africa @msu.edu	?	No	No	Yes	No	No	No	?
OSU	mowoe @magnus.acs.ohio-state.edu	?	No	No	Yes	No	No	No	No
SU	richard.roberts @foraythe.stanford.edu	?	No	No	Yes	No	No	No	No
WI	afmat @macc.wisc.edu	Yes	swahili-l @macc.wisc.edu	Yes	Yes	No	1:121/25.3	No	African Studies 608- 262-9689N81 800- 446-0396N81
Yale	No	No	No	No	Yes	No	No	No	No

At some ASCs, the center office provide a general address, while at others, a personal address belonging to the director, associate director, assistant director, or secretary is the contact point. The use of personal addresses is problematic when individuals move or take a leave of absence.

Heretofore, the Title VI ASCs generally have been independent from each other. Apart from annual directors' meetings, limited cooperation has occurred between ASCs on a variety of common interests and concerns. A major reason for this fact has been the difficulty of convenient, efficient, and low cost communication.

Given the current economic conditions in academia and the society in general, this lack of cooperation is not cost effective, productive, or practical. The adaptation of a competent networking system can not only link the twelve ASCs, making cooperation between them beneficial, reliable, and economical, but also link the centers to other overseas African studies centers.

Another very persuasive reason for the ASCs to become computer and network literate is the commitment of the Clinton administration to the development and use of high technology communications systems. The level and quality of computerization that ASCs have, may soon be an important consideration in the selection of Title VI center grants from the Department of Education. ASCs will thus be required to be models of cost efficiency and electronic networking and cooperation.

One small example of how economical and efficient a networking system can be is illustrated by the savings in time and money between the traditional US mail system used by the AASP to announce the the business meeting held for forty-five participants, and the time and cost of using computer networking. While most major professional and trade associations require registration for their annual or periodic conferences to be completed by electronic mail networks, Africanists continue to use paper and the U.S. mail.

Table 2
Time and Cost Comparison:
E-Mail versus US Mail

	E-mail (computer)	US Mail (paper)
Word Processing	Ascii format (basic text file)	Font changes (desktop publishing) additional time 30 min. x \$10/hr \$ 5.00
Printing	none	Laser copy 2 pages x \$1.25 2.50 15 min. computer time 2.50 \$ 7.50 15 min. labor x \$10/hr 2.50
Copy	none	45 copies, 2-sided, colored bond 45 x 2 x .12 0.80 15 min. labor x \$10/hr 2.50 \$13.30
Envelopes	none	legal size 45 x .03 1.35 \$ 3.35 10 min. labor x \$10/hr 2.00
Delivery	telephone call \$.06	US postage 45 x .29 11.60 10 min. labor x \$10/hr 2.00 \$13.60

	E-mail (computer)	US Mail (paper)
Time	1-10 minutes	2-5 days
Total Cost	\$.06	\$42.75

AASP president could have saved the association \$42.75 and nearly a week's time in just one mailing. Given the amount of mass mailing that this association does in a year, the savings in time and money using an computer networks system could be considerable. Similiarly, the ASA could make significant savings in its communications with its more than 2000 members.

Fellowships, grants, and position vacancies now are more frequently posted to electronic boards which are able to target their specific audience.³ With the current recession, few organizations wait for printed and published job openings. The process of advertisement, application, and submission of reference letters by computer networks can take seconds.

* * *

Computer networks are numerous. It is nearly impossible to keep track of governmental, commercial, and international network services, providing data, information, and communication. Many of these networks can even be linked, making them extraordinarily powerful and far reaching.

The remainder of this paper will focus on common networks readily available in the US, and linkages to Africa which ASCs could utilize beneficially.

For Africanists seeking direct contacts in Africa,⁴ at least 20 countries offer network connections. Larry Landweber at Wisconsin has provided a list of five network options for each African country. (Appendix A) The Internet Society and Karanja Gakio have assembled a list of addresses. (Appendix B)

Several Wisconsin Africanists' have experienced success sending and receiving messages to several African countries connected by Fidonet, UUCP, and Bitnet. Generally, users receive responses within a few minutes or days. This form of communication is considerably cheaper, faster, and more reliable than conventionable telephone, cables, telexes, and DHL mail service.

An example of how this international communication network can be applied is a summer institute on African literature for secondary school teachers being organized by the Wisconsin African Studies Outreach Program. An integral part of this institute is the establishment of contacts between U.S. teachers and literature instructors in several Anglophone African countries. Their

discussion of curriculum development for African literature will take place over the computer networks.

Africanists can utilize four fundamental computer systems: Internet/Bitnet, Fidonet, Usenet, and a number of bulletin board services (BBS). Knowledge of these systems are critical for research, teaching, administration, and extension. On these four networks, a variety of features are available: E-mail, Distribution Lists, File Transfer Protocol (FTP), Gophers, and Telnet.

I. INTERNET/BITNET

The most common network systems throughout the world are Internet or Bitnet and the various compatible networks. Africanists should make every effort to become familiar with one of these systems.

•INTERNET was originally developed as a military technology requiring a main frame computer system but has been adapted to civilian and educational use. Internet is an international network, comprising over 400 individual networks.⁵ Current numbers put the Internet at over 500,000 hosts and one million users. Nearly all American universities subscribe to the Internet network.⁶ Users on the Internet⁷ can access File Transfer Protocol (FTP) and Telnet, described below. Most Internet sites also have access to Usenet newsgroups.

At the University of Wisconsin the Internet service is provided free of charge to faculty, staff, and students. Nearly every African Studies faculty has an email address; unfortunately, not every member uses the service fully.

•BITNET (Because It's Time NETWORK) was developed by IBM for their main frame computers and utilizes the same basic technology as Internet. Bitnet and Internet are mutually compatible. Bitnet connects over three thousand hosts in over 32 countries. In Canada, the identical Bitnet network is known as Netnorth, and in Europe it is known as Earn.

Bitnet's main feature is the automatic mailing program called Listserv. Listserv file servers maintain archives of primarily low ascii documents and runs Listserv discussion groups, also known as lists. Bitnet does not support FTP or Telnet, in contrast to Internet. For this reason the ASA headquarters at Emory University has converted to the Internet system.

A. Electronic Mail

One of the most important features provided by the Internet/Bitnet networks is electronic mail (E-mail). E-mail is a computerized system for sending both public and private messages. E-mail can be used to send and receive messages on campus, between

African Studies Centers, and other national and international institutions. It is available in various formats and services. E-mail should not be confused with facsimiles (Fax) which is a photocopying technology using telephone lines.

Commercial companies can also provide E-mail connections, in addition to a wide variety of other services such as on-line news, travel reservations, stock market quotations, weather reports, and so forth. (Appendix D)

The largest commercial company is CompuServe. CompuServe Africa is a feature recently developed by CompuServe. This service seeks to meet the growing Africa demand for network connections especially from southern Africa. The currently served African countries include "Bophuthatswana," Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, Zimbabwe.⁸

In summary, E-mail is an economical, efficient, practical, convenient form of communication. The cost for multiple copy distribution is the same as for a single copy. E-mail messages or files are interactive and can be edited on a word processor. E-mail service is also accessible in the field with a laptop or notebook computer and telephone line.

B. Distribution Lists

Another Internet/Bitnet feature is the option of creating distribution lists. These lists consist of frequently used addresses which form an identifiable interest group. There are two major types of distribution lists -- private and public.

Private Distribution Lists

Private distribution lists are created for restricted and/or personal use. These lists can make various types of administration and research more efficient and convenient. For instance, all the Title VI outreach directors' addresses can be grouped and stored. One message can then be sent simultaneously to all 11 outreach directors using a distribution list. Additional lists which are used at Wisconsin include:

- ASA - Africana Librarians
- ASA - Outreach Directors (Center Directors/Chairs)
- AASP - Members
- ALTA - Officers
- Title VI African Studies Center Directors
 - UW Outreach Directors
 - UW African Studies faculty
 - UW African Studies Outreach Committee
 - UW African Studies Outreach Speakers
 - UW Graduate Students of Swahili (Teacher Corps)

Public Distribution Lists

Another type of distribution list can be developed and maintained as a private list; however, subscribers have access to the list. The type of list, for example, allows non-University of Wisconsin persons to log-on the U.W. mainframe computer for educational projects.

On many campuses, faculty have created temporary distribution lists for students as means of discussion section.⁹ Rather than assembling at a specific time and place, students log-on to the list and make their contributions on the assigned topic.

Users of these public list must request a subscription. For the subscription they receive all the messages automatically to their address. Their replies, unless specified to another user, are distributed to all the members. Unlike other services, these public distribution lists do not provide archives of messages or automatic updates of lists. Rather, a systems operator must manually retain messages and up-date the list.

African

The following list is an inventory of several public distribution lists which carry African-related discussions using Internet/Bitnet network technology.

aaajncatcc.bitnet	Burkina Faso
afriqnews@athena.mit.edu	African news service
algeria-net@monte.svec.uh.edu	Algeria
algnnews@gwuvvm.bitnet	Algeria News List-French
amazight-net@engcd.bu.edu	Eerber
arabic-1@byu.edu	(AATA service
camnet@icnucevm.cnuce.cnr.it	Cameroon
egypt-net@das.harvard.edu	Egypt
ethiopias@cleo.eng.sun.com	Ethiopia
eritrea-net@eritrea.ci.net	Eritrea
geez-cev@eritrea.ci.net	Eritrea
kenya-net@ftp.ccc	Kenya
maghreb-group@bailey.pcpac.washington.edu	North Africa
okyeame@athena.mit.edu	(for Ghanaians only)
naijanet@athena.mit.edu	(for Nigerians only)
mes@athena.mit.edu	Middle East Students
saf@athena.mit.edu	African students
tunisnet@psuvm.bitnet	Tunisia
usasa-1@afrex.mcws.fidonet.org	US-South African

Several other lists of addresses exist for African contacts.¹⁰

Swahili-I

In July, 1992, Richard Chowning, at Abilene Christian University and the author, collaborated in developing a public Swahili list.

swahili-1@macc.wisc.edu	= Internet
swahili-1@wiscmacc.bitnet	= Bitnet

Subscribers to this list are literate in Swahili and seek to communicate in the language. As more Americans and Africans wish to interact in Swahili, this service has become a conversation board not only for professors and graduate students but also for new learners, both in the US and Africa.

C. Listserv

The Listserv system is a feature which some universities provide for automating the distribution lists. This service customarily requires a minimum of 100 users before a computer center will accept responsibility for posting new users, archiving messages, and maintaining the variation commands for the users. Over 3000 lists exist worldwide in this automated, public format.

This service was originally developed through Bitnet using IBM computers. Anyone with Bitnet access can utilize this service, with a free subscription. Once subscribed, the users receive everything sent to the mailing list.

Some examples of lists and their contents available through Listserv are:

Aasnet-1@uhupvm1.bitnet	(A-A Student Net)
Abslst-1@cmuvm.csv.cmich.edu	(Assn. of Black Sociologists)
Afam-1@mizzoul.missouri.edu	(A-A Research)
Afas-1@kentvm.bitnet	(A-A Studies)
Africa-1@vtvm2.bitnet	(African-related news)
Africana@wvm1.bitnet	(Info Technology and Africa)
Afroam-1@harvarda.harvard.edu	(A-A Life and Culture)
Amnesty@jhvm.bitnet	(Amnesty International)
Anthro-1@ubvm.bitnet	(Anthropologists)
ASA-1@tamvm1.bitnet	(African Students Assoc.)
Blacklib@guvm.bitnet	(Conf. of Black Librarians)
Devel-1@american.edu	(development issues)
ERL-L@psuvm.bitnet	(Educational Research Assoc.)
Kids-91@nosuvm1.bitnet	(K-12 net)
Langues-L@quebec.bitnet	(French)
Llti@dartcms1.bitnet	(language & tech)
Multi-1@barilmv.bitnet	(multi-lingual setting)
Pcorps-1@cmuvm.bitnet	(US Peace Corps volunteers)
Slart-1@cuny2.bitnet	(second language acquisition)
Xcult-1@psuvm.bitnet	(Inter-cultural news)

Newsletters and Journals

The Directory of Electronic Journals and Newsletters is a comprehensive listing of all electronic journals and newsletters which are of academic interest and available through Bitnet, Internet and affiliated networks. This Directory is part of an ongoing project and is updated as new electronic journals and newsletters come into existence and as existing entries are changed.

As the traditional taxonomy of "journal" and "newsletter" is

ill-suited to the diversity of formats found within electronic networks, a third category of "Hypercard Stacks, Digest-Newsletters and Others" is included.

D. FTP (File Transfer Protocol)

The Internet provides free access for file upload and download. Anonymous FTP allows one to log into another mainframe machine and transfer files immediately. FTP can retrieve an electronic copy of a document from the other side of the globe in minutes. Through Internet, hundreds of thousands of files and programs reside on FTP file servers.

FTP sessions normally are restricted to after business hours at the transfer site. This practice reduces the cost and increases the speed of transfer.

One very valuable document available through the FTP network is on-line library catalog listings. Arthur St. George at the University of New Mexico, has been up-dating this list of library addresses for over five years. To use these library catalogs, however, one must have access to Telnet service.

E. Telnet

Telnet is not a network, as its name implies, but actually a service for a fee which allows remote access to mainframe computers. Some of the ASC universities provide telnet to the computer centers. Unfortunately, the actual buildings housing the Wisconsin African Studies faculty presently do not have this service.

F. Gopher/CWIS/WAIS

Internet also provides access to campus wide information services (CWIS) or wide area information service (WAIS). These services often utilize "gopher" technology. Depending on the ASC's university computer policy, Africanists can log in via telnet or dial-up modems. In addition to providing E-mail addresses, course lists, weekly announcements, and faculty addresses, this "gopher" connection allows entrance to computerized library catalog systems around the world. As such, it is an indispensable tool for library research. All twelve ASC universities provide this service; however, still few Africanists are aware of it or utilize it.

African Studies Board

The University of Pennsylvania has created an African Studies on-line server" via "gopher." The African Studies section of PennInfo is located under "Interdisciplinary Programs" in "PennInfo's Main Menu." To access the African Studies database follow the directions below:

INTERNET:

PennInfo can be accessed from other universities and locations through At the dial prompt, type "PennInfo;" at the main menu, select "Interdisciplinary Studies" and then "African Studies." In order to view GIF graphics, the connection must be made via ethernet, MacSLIP, SLIP, Telix or a similar protocol.

gopher.upenn.edu

FTP.upenn.edu

telret penninfo.upenn.edu

Africanists also can obtain this server through "Veronica" search under "Africa."

II. Fidonet

Fidonet¹² is an international, decentralized, cooperative, voluntary system in which participants serve one another by relaying messages through a routing system. It is a network of computer bulletin board systems connected by a common mail transfer protocol (known as FTSC-0001). There are some 11,000 Fidonet networks worldwide.

A list of all Fidonet bulletin board systems (BBSs) (known as the "nodelist") is updated weekly from a central point (node 1:1/0) and is distributed throughout the network. Like Internet/Bitnet, messages include private and public conversations, but are known on this network as "echo messages". Since this network has no central computers, Fidonet is organized in a branching system with six geographically designated zones:

- 1 = USA/Canada/Mexico - North America
- 2 = Europe
- 3 = Australia, New Zealand (Oceania)
- 4 = Latin America
- 5 = Africa
- 6 = Asia

Fidonet nodes may be established by individuals using only personal computers, international speed-modems, and free software. There are no overhead costs. Consequently, this process permits access to developing areas by users of the international hosts. Gateways or links have reduced the cost of transmission. A sample of African Fidonet addresses are listed in Appendix E. Table 3 illustrates the linkages and gateways.

Table 3
ICGFido
(Institute for Global Communications)
EcoNet/PeaceNet, USA

ENDA-Dakar Senegal 5:771/1	UNZA Zambia 5:761/1	GhastiNet Ghana 5:781/1			
+-----+-----+-----+-----+					
	PADIS Ethiopia 5:751/1	ELCI Kenya 5:731/1	MANGO Zimbabwe 5:721/1	South Africa 5:701/1	
		+-----+		+-----+	
		MUKLA Uganda 5:732/1	COSTECH Tanzania 5:733/1	BIG MATHATA Botswana 5:7001/1	WorkNet South Africa 5:7101/26
					+ FRCS Zambia 5:7101/28

Echo

Echomail is a feature of Fidonet. In this technology users post messages to a specific forum, conference group, or newsgroup. Echomail is public, appearing on all systems that are carrying that conference or group. Message are not sent to individual mail boxes. These conference groups require no subscription or fees. Currently, four Echomail conferences exist having interest to Africanists:

Africa Link
Peace Corps
South Africa
Southern Africa Drought

K12Net

K12Net is a loosely-organized, decentralized Fidonet service of school based/oriented "electronic bulletin board systems" (BBS's) throughout the world. These BBSs can share curriculum-related conferences or "echo forums", making them available to students and educators at no cost, and usually on a local telephone call. The K12Net echoes are also available as Usenet newsgroups in the hierarchy K-12.

K12Net provides millions of teachers, students, and parents in metropolitan and rural areas throughout the world with the ability to 'meet' and discuss educational issues, exchange information and share resources. Unlike other school-oriented networks, K12Net's explosive growth since its founding in 1990, can be attributed to several factors which make it a separate and distinct service:

1) K12Net provides students, teachers and community members with access to FREE international telecommunications

capabilities with an educational orientation on a local call.

2) It is relatively easy and inexpensive to set up a K12Net BBS. Even students may act as system operators.

3) It is decentralized. Each participating BBS is locally owned, controlled and operated. It can be oriented to serve the needs of the local school and is an excellent vehicle for developing community relations.

4) It is an excellent vehicle for providing students, teachers and parents with a non-threatening introduction to global telecommunications. As a classroom tool it can be used to promote literacy, global perspective, and competency in 21st century information technologies.

III. Usenet News

Usenet (User's Network) is a third worldwide network that provides one main service -- news. This electronic collection of newsgroups distributes over 1000 different online topics; however, not all sites carry all newsgroups. Usenet connects over 10,000 hosts and 300,000 users. Unlike Bitnet and Internet, Usenet is not an academic network. Nevertheless, Usenet is available at most universities having Internet (Telnet) capabilities. Usenet newsgroups are largely unavailable to Bitnet sites. While most of Usenet's sites are commercial, advertising is strictly forbidden on the Usenet network.

Usenet is similar to a bulletin board system which uses direct telephone links. The user connects to read a variety of message areas. No files are associated with this service, and messages are automatically deleted on a regular basis; consequently, it provides no archiving characteristic of the Bitnet listserv.

African-related Usenet Message Areas:

soc.culture.maghreb
soc.culture.arabic
soc.culture.egyptian
talk.politics.mideast

soc.culture.southafrica
soc.culture.african
rec.music.afro-latin
rec.travel

IV. Bulletin Board System

The bulletin board system (BBS) connects personal computers directly through a telephone connection. Each board consists of people interested in sending and receiving messages and files dealing with a specific topic. BBS software allows for greater

variation in format depending on the system operator and proposed service. Because the BBSs are telephone dependent, most users are local. Since these boards cost the user a telephone call, unlike the academic networks (Internet/Bitnet), a long distance log-in can be expensive. The majority of users of BBSs do not have access to Internet or Bitnet.

Presently, few BBSs exist for strictly African-related content. The initial cost of software design and the maintenance time discourage many Africanists from creating boards. Although users are interested, African content fails to compete with other less specific boards such as the stock market, software, or travel.

These boards combine message section and file section. Most software allows the user to interact with the systems operator in "chat mode." This feature is in contrast to Internet/Bitnet which do not permit interactive communication. For the most part these boards are subscription free. (Appendix F)

Two ASA members have created African-related BBSs for their region as well as for national use. Both boards have maintained continuous service for the past three years. In addition, both boards provide Fidonet gateways to allow for users with that capability to participate on these BBSs.

African Studies - 1989 Patricia Kuntz (608) 262-9689 8 N 1 300/1200/2400/9600
 (800) 446-0396 8 N 1 /9600/14,400 modem
 Fidonet connections 1:121/25.3
 Internet connections @p3.f25.n121.z1.fidonet.org

Baobab - 1989 Bob Barad (202) 296-9790 8 N 1 300/1200/2400/9600/14,400
 Fidonet connections 1:109/151
 Internet connections @f151.n109.z1.fidonet.org

In the last few years, a proliferation of bulletin boards have occurred. The US Department of Education has developed its own BBS called Smartline (sources of materials and research about teaching and learning for improving nationwide education).

The National Foreign Language Center also created a bulletin board focusing on the research, teaching, administration, and assessment of less-commonly taught language organizations (for example, African Language Teachers Association). This bulletin board will provide information on instruction and curriculum development for major African languages.

Conclusion

The four computer networks briefly described above, and the variety of services which they provide are fundamental tools for Africanists. As such, these networks should be readily available and used by administrators, faculty, students, and outreach in the

twelve national ASCs. Proficiency in computer technology, including the manipulation computer networks has become a requirement for Africanists in research, teaching, administration, and extension.

In order to improve the computer and computer networking skills of Africanists in ASCs, a number of activities should be initiated:

- Workshops need to be organized for training in the use of the four major networks.
- A handbook needs to be developed to help select the appropriate technology for US and African applications.
- A directory of networks, boards, and users addresses needs to be compiled and maintained.
- A guide for the installation of of specific technology needs to be developed.
- A list of grants and financial assistance which are available to support computer networking needs to be compiled.

15 August 1993

Notes

1. The author would like to thank Robert Barad, Robert Brandstetter, Robert Moldenhauer, John Schoneboom and Amy Wilson for their assistance in preparing this paper.
2. DeLoughry, T.J. (14 October 1992) "Presidents Urged to Help Expand Use of Technology on Campuses," THE CHRONICLE OF HIGHER EDUCATION, A19-20.
Wilson, D.L. (30 September 1992) "Huge Computer Network Quickens Pace of Academic Exchange and Collaboration," THE CHRONICLE OF HIGHER EDUCATION, A17-18.
Wilson, D.L. (7 October 1992) "Massive Data Base Used by Libraries Hopes to Provide its Services through the Internet," THE CHRONICLE OF HIGHER EDUCATION, A17-18.
3. A recent Wisconsin doctoral graduate secured a position at Bentley College after reading a job notice on a listserv board. That position was never advertised in THE CHRONICLE OF HIGHER EDUCATION or the traditional printed formats.
4. Tindimubona, A. and Wilson, A.A. (1992) Electronic Networking in Africa: Advancing science and technology for development -- workshop on science and technology communication networks in Africa. Washington, DC: American Association for the Advancement of Science, African Section.
Lewis, S.G. and Samoff, J. (1992) Microcomputers in African development: Critical Perspectives. Boulder, CO: Westview Press.
5. A useful description of Internet capabilities is available through FTP sites. Citations for FTP files can be found in Appendix C.
6. Richard J. Smith, University of Southwestern Louisiana, organized an on-line Internet workshop "Navigating the Internet: An Interactive Workshop," 16 November - 11 December 1992. Workshop described UNIX, VMS, VM. rs@usl.edu Following the workshop all materials will be placed at an anonymous FTP.
7. LaQuey, T. and Ryer, J.C. (1993) The internet companion, A beginner's guide to global networking. Reading, MA: Addison Wesley.
8. News release 3 September 1992. In the United States contact CompuServe directly. In South Africa (012) 841-2530 or Southern Africa (+27) (12) 841-2530.
9. American Council on Education. (1992) *Internationalizing the Undergraduate Curriculum: A Handbook for Campus Leaders*.
10. Internet Society membership list.
African-L (Pan-African listserv conversation board)
Bob Barad (Baobab) 1430 21st Street, NW, Washington, DC 20036 [bob.barad@p45.n151.n109.z1.fidonet.org]
Karanja Gakio, FTP Software, Inc. 2 High St., North Andover, MA 01845 [gakio@ftp.com]
Tom Jennings, Fido Software, Box 77731, San Francisco, CA 94107
Arthur McGee, 72377.1351@compuserve.com
11. Sysop is Julie Sisskind % Sandra Barnes, Anthropology. sisskind@mail.sas.upenn.edu
12. Information gathered from discussions with St. Mary Margaret Pignone (American University), Robert Barad (Washington, DC), Janet Murray (Portland School District), and Robert Moldenhauer (University of Wisconsin).

Appendix A

International Networks to Africa

INTERNATIONAL CONNECTIVITY
Version 8 - April 15, 1993

Please send corrections, information and/or comments to:

Larry Landweber, Computer Sciences Dept., University of Wisconsin - Madison
1210 W. Dayton St., Madison, WI 53706, lhl@cs.wisc.edu, FAX 1-608-265-2635

Include details, e.g., on connections, sites, contacts, protocols, etc.

Thanks to the many people from around the world who have provided information. This version (postscript, ditroff, text forms), maps in postscript, and earlier versions may also be obtained by anonymous ftp from ftp.cs.wisc.edu in the connectivity_table directory.

In the following, "BITNET" is used generically to refer to BITNET plus similar networks around the world (e.g., EARN, NETNORTH, GULF-NET, etc.).

SUMMARY

NUMBER OF ENTITIES WITH INTERNATIONAL NETWORK CONNECTIVITY = 127

BITNET

Col. 2 (Entities with international BITNET links.)

b: minimal, one to five domestic BITNET sites, 18 entities

B: widespread, more than five domestic BITNET sites, 33 entities

IP INTERNET

Col. 3 (Entities with international IP Internet links.)

I: = operational, accesible from entire IP Internet, 54 entities

i: = operational, not accesible via the NSFNET backbone, 2 entities

UUCP

Col. 4 (Entities with domestic UUCP sites which are connected to the Global Multiprotocol Open Internet.)

u: minimal, one to five domestic UUCP sites, 43 entities

U: widespread, more than five domestic UUCP sites, 64 entities

FIDONET

Col. 5 (Entities with domestic FIDONET sites which are connected to the Global Multiprotocol Open Internet)

f: minimal, one to five domestic FIDONET sites, 20 entities

F: widespread, more than five domestic FIDONET sites, 59 entities

OSI

Col. 6 (Entities with international X.400 links to domestic sites which are connected to the Global Multiprotocol Open Internet).

o: minimal, one to five domestic X.400 sites, 8 entities

O: widespread, more than five domestic X.400 sites, 23 entities

Email connections to Algeria, Angola, Gambia, Malawi, and Morocco have been reported but have not been verified or are not yet stable and hence are not included in the table or in the above totals.

--- AFRICAN COUNTRIES ---

---f- BW Botswana (Republic of)
--u-- BF Burkina Faso (formerly Upper Volta)

--u-- CM Cameroon (Republic of)
--u-- CG Congo (Republic of the)
--u-- CI Cote d'Ivoire (Republic of)

b-U-- EG Egypt (Arab Republic of)
---F- ET Ethiopia (People's Democratic Republic of)

---F- GH Ghana (Republic of)

---f- KE Kenya (Republic of)

--u-- LS Lesotho (Kingdom of)

--u-- ML Mali (Republic of)
---f- MU Mauritius
--u-- MZ Mozambique (People's Republic of)

--u-- NA Namibia (Republic of)
--u-- NE Niger (Republic of the)

--u-- RE Re'union (French Department of)

--Uf- SN Senegal (Republic of)
--u-- SC Seychelles (Republic of)
-IUFO ZA South Africa (Republic of)

---f- TZ Tanzania (United Republic of)
--u-- TG Togo (Togolese Republic)
bIUfo TN Tunisia

---f- UG Uganda (Republic of)

--uf- ZM Zambia (Republic of)
--uf- ZW Zimbabwe (Repubiic of)

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inclusion of this copyright notice.

Appendix B

Directory of African
E-mail AddressesPersonal Addresses

abida@tnearn.bitnet	Tunisia, IRSIT
lishan_adam@pl.f1.n751.z5.gnvido.fidonet.org	Ethiopia, PANDIS
tbah@m7imail.com	Guinea, Univ. of Conakry
barrett@daisy.ee.und.ac.za	South Africa, Univ. of Natal
ab@estinet.uucp	Egypt, Enstinet
mark.bennett@unza@igc.org	Zambia, Univ. of Zambia
gstevens@auc.edu	Egypt, American Univ. in Cairo
endadak@gn.apc.org	Senegal, Enda-Third World
fekadu@pl03.f1.n751.z5.fidonet.org	Ethiopia, NSTI
charles.musisi@f1.n732.z5.gnvido.fidonet.org	Uganda
ccfj@hippo.ru.ac.za	South Africa, Rhodes Univ.
ccml@hippo.ru.ac.za	South Africa, Rhodes Univ.
ghastinet@f1.n781.z5.gnvido.fidonet.org	Ghana
vicshaw@frd.ac.za	South Africa, Pretoria

Organizational Addresses

ARSONET - arso@f10n731.z5.fidonet.org	Kenya, Ethiopia, Egypt, Senegal
EARN - elkotb@egfrcuvx or ellouze@tnearn	Algeria, Morocco, Egypt, Tunisia
ESANET - unics@gn.apc.org	Kenya, Tanzania, Uganda, Zambia, Zimbabwe
GASTINET - ghastrinet@gn.apc.org	Ghana
HEALTHNET - satellife@igc.org	Kenya, Moz., Tanz., Zambia, Uganda, Zimb.
KCI-NET - shem@minster.york.ac.uk	Kenya
NGONET Africa -	Ag, Bt, Kn, Ls, Mz, Nm, Tn, Sn, SA, Tz, UG, Zm, Zw.
PADISNET - padis@f1n.751.z5.fidonet.org	Ethiopia
RECOSCIX-WIO - cdp!gn!recoscix%labrea@stanford	Et,Kn,Mg, Mr, Mz, Sm, Tz
RIO Africa - renaud@orstom.fr	BF, CM, CG, CI, Ml,Mr,NG, Sn, Tg
UNINET - ccml@hippo.ru.ac.za	Botswana, Ethiopia, Namibia, Zimbabwe
WORKNET - worknet@worknet.alt.za (5:7101/26)	South Africa

Country

-----DIRECTORY OF ELECTRONIC MAIL ADDRESSES IN AFRICA-----

Please send corrections to

gakio@ftp.com, or

Karanja_Gakio@pl1.f151.n109.z1.fidonet.org

16-Jul-92

BURKINA FASO

ORSTOM Ouagadougou:

VILLEMIN, Serge

villemin@ouaga.orstom.fr

System Manager

EGYPT (Egyptian Universities and Research Institutes Network)

Egyptian Nodes

Article: 13743 of soc.culture.arabic

Subject: Re: Nodes in Egypt

From: alexan@mtroyal.ab.ca

Date: 1 Nov 92 09:37:32 MST

Egypt Nodes:

Our center is located at Cairo University main campus. It is the main routing node of the egyptian universities network eun. Alex, assiut, cairo, drtpc, helwan, mans, minia, shams, shebin, suez, tanta and zagzig are connected to eun. Also cher (center of higher educational research), esic (expert system for improved crops), opera house, egidscvm (information decision and support center), auc (american university in cairo) and who (world health organization) are connected to our network.

Now egircuvx and egidscvm are EARN nodes but in 2 months WHO and AUC will be EARN nodes also. In 2 weeks you can contact any user on any of these nodes (eun or earn) using address of that form user@node.Eg, i.E., User@alex.Eg where we are defined as a gateway to our eun users.

Administrative and Technical Contact:

ABDELBAKI, NASHWA nashwa%egfruvx.bitnet@cunyv.cuny.edu

[Note: from Internet, be sure to address bitnet address (those without a .eg suffix) as above]

Universities:

Ain-Shams U	Fac of Eng:	sameh@shams.eg
Alexandria U	Fac of Eng:	alex@alex.eg
American U in Cairo:		hussein@auc.eg
Assiut U	Fac of Eng:	assiut@egfrucvx
Cairo U	Fac of Eng:	system@cairo.eg
Cairo U	Higher Educ Research:	howida@cher.eg
Cairo U	Ctr for Crop Research:	esic@egfrucvx
Helwan U	Fac of Eng:	hlwan@egfrucvx
Mansoura U	Computer Center:	system@mans.eg
Minia U	Computer Center:	system@minia.eg
Menoufia U	Fac of Eng:	shebin@egfrucvx
Suez-Canal U:		suze@egfrucvx
Tanta U	Computer Center:	tanta@egfrucvx
World Health Organization:		system@who.eg
Zagazig U	Computer Center:	emad@zagzig.eg

ETHIOPIA (Pan African Development Information System (PADIS))
Lishan ADAM lishan_adam@p0.f1.n751.z5.gnfnido.fidonet.org

GHANA (Council for Scientific and Industrial Research, Accra)

System Operator:

Mohammed Alhaji Mohammed_Alhaji@f1.n781.z5.gnfnido.fidonet.org

KENYA

Institute of Computer Science, University of Nairobi, P.O. Box 40197, Nairobi.

UNICS@gn.apc.org

Tony RODRIGUES

Director

Tony_Rodrigues@p105.f1.n731.z5.gnfnido.fidonet.org

Bill OKELO-ODONGO Okelo_Odongo@p105.f1.n731.z5.gnfnido.fidonet.org

Lecturer

Shem OCHUODHO

Lecturer

Shem_Ochudho@f4.n731.z5.gnfnido.fidonet.org

Environmental Liaison Centre International (ELCI), P.O. Box 72461, Nairobi
Tel: 254 2 562 015, 254 2 562 022, Fax: 254 2 562 175

Appendix C

Internet Description

Strangelove, Michael. The Electric Mystic's Guide to the Internet: A Complete Bibliography of Networked Electronic Documents Relevant to Religious Studies. Volume One, Version 1.0. (University of Ottawa, 1992).

Available via FTP from the node panda1.uottawa.ca (137.122.6.16) in the directory /pub/religion/ as the file electric-mystics-guide-v1.ps (postscript file) and as the file electric-mystics-guide-v1.zip (zipped Wordperfect 5.1 text) and as the file electric-mystics-guide-v1.txt (low ascii text). It is also available as a low ascii text via the CONTENTS Project Listserv fileserver as MYSTICS V1-TXT from Listserv@uottawa or Listserv@acadvm1.uottawa.ca.

Host cs.ubc.ca (137.82.8.5)
 Last updated 03:33 12 Aug 1992
 Location: /pub/archive/mirror/EFF/internet-info
 FILE rw-r--r-- 59192 Mar 5 1991 hitchhikers.guide

Host argus.stanford.edu (36.56.0.151)
 Last updated 01:08 9 Aug 1992
 Location: /barrnet/intro
 FILE rw-rw-r-- 49843 Feb 25 10:05 hitchhikers.guide

Host nic.sura.net (128.167.254.179)
 Last updated 02:11 29 Jul 1992
 Location: /pub/networking
 FILE rw-rw-r-- 49843 Jul 31 1990 hitchhikers.guide

Host kragar.eff.org (192.88.144.4)
 Last updated 01:18 26 Jul 1992
 Location: /pub/internet-info
 FILE rw-rw-r-- 59192 Mar 6 1991 hitchhikers.guide

Host hubcap.clemson.edu (130.127.8.1)
 Last updated 01:19 24 Jul 1992
 Location: /pub/info
 FILE rwxr-xr-x 49843 Jan 25 1991 hitchhikers.guide

Host raimund.wu-wien.ac.at (137.208.3.5)
 Last updated 04:31 16 Aug 1992
 Location: /pub/lib/info/internet-info
 FILE rw-r--r-- 61447 Oct 24 1990
 hitchhikers-guide-to-internet.txt

Host csn.org (128.138.213.21)
 Last updated 01:14 13 Aug 1992
 Location: /Edgenet
 FILE rw-rw-r-- 61447 May 2 03:19
 hitchhikers-guide-to-internet.txt

Appendix D

NewsNet: For the Business Information Edge
Contact: Kelly Bahel, NewsNet, Account Rep., 945 Haverford Road,
Bryn Mawr, PA 19010 (215) 527-8030

International Affairs Products: (800) 952-0122

AFRICA NEWS

Africa's political, economic, and cultural developments and the US relations concerning this continent. Written biweekly with depth and historical perspective.

ANGOLA PEACE MONITOR

Focuses on the process of national reconciliation between Angola's MPLA government and UNITA. Monthly report of current developments in Angola and across the international spectrum. A dialogue of Washington foreign policy establishment.

ASP DIPLOMAT

Covers internal and foreign policy, national defense, and regional security in the Middle East/North Africa. Weekly features survey the countries and explore the military structure and balance of power in the Arab League.

MIDEAST MARKETS

Weekly reports on all the commercial, financial, and governmental developments affecting business in the Middle East/North Africa. Provides information on useful business contacts and on the deals US companies are negotiating.

SOUTH AFRICAN FOCUS

A daily news summary compiled from various sources within South Africa. All the major daily newspapers in the Pretoria/Johannesburg metropolitan area. Breaking news stories summarized.

SOUTHSCAN -- SOUTHERN AFRICA

Weekly bulletin of southern African affairs containing authoritative and timely reporting from correspondents in the field. Features comment on conditions inside South Africa.

International News Services

A P DATA STREAM INTERNATIONAL NEWS WIRE

Continuous international news from AP including United Nations dateline and updates on international events.

AGENCE FRANCE-PRESSE

Edited by English-speaking journalist from AFP's network. Updated continuously every 15 minutes. Specialty Africa.

INTER PRESS SERVICE

Next-day compilation of news items from IPS. Coverage Africa.

REUTERS NEWS REPORTS

One hour embargo on continuous updates.

UPI INTERNATIONAL NEWS WIRE

Continuous, real-time global news reporting.

Appendix E

Fidonet List for Southern Africa

From: IN%**"AFRICA-L@VTVM2.BitNet"** **"FORUM PAN-AFRICA (Peer Distribution List)"**
 14-AUG-1992 12:25:17.91
 Subject: E-Mail to Africa via Fidonet
 <Zone 5 segment only> = Africa
 Fidonet Nodelist for Friday, July 31, 1992 -- Day number 213 : 01456
 The Fidonet(r) NodeList, a listing of the systems within Fidonet.

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o The Fidonet NodeList is compiled so that computer systems within Fidonet may communicate with each other. Use and intra-Fidonet distribution rights are granted to all Fidonet system operators for the purposes of communication within Fidonet or applying for a Fidonet node number.

o This is a compilation of individual nodelist segments contributed by the drafters and compilers of those segments. Contribution of these segments to this compilation does not diminish the rights of the contributors.

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Fido(r), Fidonet(r), and the dog with diskette are registered marks of Tom Jennings and Fido Software.

**** Africa ****

Zone, 5, AFRICA, Port_Elizabeth_RSA, Henk_Wolsink, 27-41-342859, 9600, CM, HST, V32b, V42b, XA

, 1, Zonegate_AFR-NA, Grahamstown_RSA, Dave_Wilson, 27-461-311085, 9600, CM, MO, V32
, 2, Zonegate_AFR-EUR, Grahamstown_RSA, Dave_Wilson, 27-461-311085, 9600, CM, MO, V32
, 3, Zonegate_AFR-OZ, Grahamstown_RSA, Dave_Wilson, 27-461-311085, 9600, CM, MO, V32
, 4, Zonegate_AFR-LA, Grahamstown_RSA, Dave_Wilson, 27-461-311085, 9600, CM, MO, V32
, 6, Zonegate_AFR-ASIA, Grahamstown_RSA, Dave_Wilson, 27-461-311085, 9600, CM, MO, V32

, 100, PCBoard_HELP, Port_Elizabeth_RSA, Henk_Wolsink, 27-41-342859, 9600, CM, HST, V32b, V42b, XA

, 102, BinkleyTerm_HELP, Welkom_RSA, Niel_Uys, 27-171-84102, 9600, CM, HST, V32b, V42b, XA
, 103, FrontDoor_HELP, Cape_Town_RSA, Ralph_Colyn, 27-21-790-4551, 2400, CM, XA
, 104, Remote_Access_HELP, Johannesburg_RSA, Clive_Jones, 27-11-868-4790, 9600, CM, HST, V32, V42b, XA

, 105, Opus_HELP, Port_Elizabeth_RSA, Bryan_Haeefe, 27-41-662491, 9600, CM, HST, V32b, V42b, XA

, 200, Z5_Echo_Coord, Welkom_RSA, Niel_Uys, 27-171-84102, 9600, CM, HST, V32b, V42b, XA
, 271, REC_Region_71, Pretoria_RSA, Richard_Peer, 27-12-221-2345, 9600, CM, HST, V32, V42b, XA;

Region, 70, BOTSWANA, Gaborone, John_Case, 267-373461, 9600, CM, XR, V32b, V42b;
Host, 7001, Botswana, Gaborone, John_Case, 267-373461, 9600, CM, XR, V32b, V42b
, 1, Big_Mathata's_Fido, Gaborone, John_Case, 267-373461, 9600, CM, XR, V32b, V42b;

Region, 71, SOUTH_AFRICA, Port_Elizabeth, Henk_Wolsink, 27-41-342859, 9600, CM, HST, V32b, V42b, XA;

Host, 7101, Transvaal, Pretoria, Richard_Peer, 27-12-221-2345, 9600, CM, HST, V32, V42b, XA
, 10, COMPU-SECURE, Pretoria, Paul_Wolsink, 27-12-377-3648, 1200, MO, !01, XR
, 12, INFOLINK, Pretoria, Peter_HEINDL, 27-12-55-6177, 2400, CM, XA, MNP
, 20, Unisa_Editorial, Pretoria, Steve_Hayes, 27-12-429-2882, 2400, CM, XA

,22,Novell_User_Group,Pretoria_RSA,Richard_Peer,27-12-221-2345,9600,CM,HST,V32,V42b,XA
 ,28,FRCS_Unix_Mail-Only,Pretoria,Paul_Nash,27-12-561-1305,2400,MO,XX,MNP
 ,32,HSRC_BBS,Pretoria,David_Butler,27-12-28-3124,2400,CM,XA
 ,33,Image_2000,Pretoria,Koot_Swanepoel,27-12-991-1854,2400,CM,MNP,XX
 ,34,HSRC_Genealogy_BBS,Pretoria,Isabel_Groesbeek,27-12-202-2433,2400,CM,XX
 ,35,The_Mailbox,Pretoria,Stefan_Snyman,27-12-70-6158,2400,XA
 ,36,Pat's_System,Pretoria,Pat_Verner,27-12-73-2573,9600,CM,HST,V42,XA
 ,37,Top_Byte,Verwoerburg,Neal_Blount,27-12-660-2410,2400,CM,XA
 ,46,Tele_Soft_BBS,Pretoria,AC_Joubert,27-12-348-3786,2400,CM,XA
 ,50,No_Name_BBS,Pretoria,Pieter_Erasmus,27-12-329-1743,2400,MNP,CM,XA
 ,51,Red_Scorpion,Pretoria,Sergio_Barata,27-12-73-9401,2400,XA
 Hub,100,S_Transvaal,Johannesburg,Dave_Pedler,27-11-403-1757,9600,CM,HST,V32b,V42b,XA
 ,1,Golden_City_Opus,Johannesburg,Dave_Pedler,27-11-403-1757,9600,CM,HST,V32b,V42b,XA
 ,2,The_Catalyst_Jhb.,Johannesburg_RSA,Tjaart_Silvis,27-11-888-3341,9600,V32,CM,XA
 ,6,Netline_KSD,Henley-On-Klip,Gustav_Karlsson,27-16-66-0955,9600,CM,HST,V42b,XA
 ,7,Softex_KSD,Johannesburg,Petrus_van_Breda,27-11-975-9073,9600,CM,HST,V42b,XA
 ,9,The_Capricorn,Johannesburg,Mike_de_Bruyn,27-11-683-2679,9600,CM,HST,V32b,V42b,XA
 ,14,C.A.L.M._BBS,Alberton,Clive_Jones,27-11-868-4790,9600,CM,HST,V32,V42b,XA
 ,19,NetLine-2,Randburg,Malcolm_Kleu,27-11-476-4735,9600,CM,XA
 ,21,Clipper_Expert_BBS,Johannesburg,Russel_Stromin,27-11-643-4201,2400,CM,XA
 ,23,PcBoard_RSA,Johannesburg,Ian_Gerada,27-11-487-3541,9600,HST,V32,XA
 ,24,Netline_Northcliff,Johannesburg,Alan_Kanowitz,27-11-477-1225,9600,HST,XA
 ,26,WorkNet_Johannesburg,Simone_Shall,27-11-484-3724,9600,PEP,V32,CM,MO,XA
 ,27,Digitec_Online,Johannesburg,Anthony_Gerada,27-11-476-7136,9600,HST,XA
 ,30,BusiBaud,Johannesburg,J.J._Milner,27-11-788-3874,2400,CM,XA
 ,31,Night_Owl_BBS,Johannesburg,Tinus_Leroux,27-11-774-4152,2400,CM,XA
 ,39,Dyanmic_Wildcat,Johannesburg,Duggie_Clarke,27-11-680-9143,2400,CM,XA
 ,40,Layout_de_Marillac_BBS,Johannesburg,Allan_Marillier,27-11-834-3476,9600,CM,HST,XA
 ,41,OS/2_&_Windows_User_Group,Roodepoort,Simon_Snyman,27-11-475-3796,9600,CM,V32b,V42b,XA
 ,42,Lakeside_BBS,Roodepoort,Mark_Stayt,27-11-472-5521,2400,CM,XA
 ,43,Tritel_Support,Germiston,Grant_Weitsz,27-11-916-1204,2400,XA
 ,44,Anton's_BBS,Germiston,Anton_Vermeulen,27-11-902-8783,2400,CM,XA
 ,45,Catacomb_BBS,Germiston,Craig_Nichols,27-11-827-6763,2400,CM,XA
 ,47,Fast!_BBS,Sandton,Graeme_Slogrove,27-11-706-1749,9600,V32,V42b,CM,XA
 ,48,Domain_of_Waveware,Sandton,Blake_Turner,27-11-706-1749,9600,CM,V32,MNP,V42b,XA
 ,49,Micro_City,Wynberg,Clive_Jones,27-11-987-1663,2400,CM,XA
 ,52,Pro_Forum,Johannesburg,Nigel_Bakker,27-11-441-4100,9600,CM,V32,V42b,XA
 ,53,SARC_Support,Johannesburg,James_Band,27-11-646-2456,9600,CM,HST,V42b,XA
 Host,7102,West_Cape_Net,Cape_Town,Sean_White,27-21-58-7129,9600,CM,V32,V42b,MO,XA
 ,11,Binkley's_Closet,Stellenbosch,Pieter_Muller,27-2231-77-4605,2400,XA,MO
 Down,100,Netline,Somerset_West,Gert_Botha,27-24-51-3036,9600,HST,V32,V42b,CM,XA
 ,110,Virus_Resource_Centre,CT,Oliver_Stuedler,27-21-24-2208,9600,HST,V32,V42b,CM,XA
 ,111,Magnum_BBS,CT,Joe_Rinck,27-21-26-1101,2400,MNP,XA
 ,112,Geonet_Amiga_BBS,CT,Eric_Carsten,27-21-592-2686,2400,CM,XX
 ,113,Night_Hawk_BBS,CT,Barry_Williams,27-21-96-3734,2400,XA
 ,115,Integrated_Systems,CT,Rael_Paster,27-21-448-7442,9600,V32,V42b,CM,XA
 ,117,MEG-DATA,CT,Ian_Meggy,27-21-531-0450,2400,CM,XX
 ,120,Interlink_BBS,CT,Michael_Cameron,27-21-683-2909,2400,CM,MNP,XA
 ,121,Capricorn][_Fido,CT,Ralph_Colyn,27-21-790-4551,2400,MNP,MO,XA
 ,123,Chatnet_BBS,CT,Keith_Waters,27-24-56-3112,9600,CSP,CM,XA
 ,124,Address_Unknown,CT,Rob_Bernstein,27-21-72-9418,9600,V32,V42b,MO,XA

,125,Synchronous-Black-Hole,CT,Alister_Van_Tonder,27-21-21-5228,9600,HST,V32,V42b,MO,XA

,327,x-Link,CT,Sean_White,27-21-58-7129,9600,CM,V32,V42b,MO,XA

,713,Chaos_Manor,CT,Frank_R_Pizer,27-21-557-6775,9600,HST,XA,MO

,714,The_Mutant_Pencil's_Pad,CT,Santie_Vandenplas,27-21-99-1756,2400,MNP,CM,XA

Host,7103,Natal_Net,Durban,Chris_Kenward,27-31-7655045,9600,CM,HST

,1,Softel_Monster_BBS,Durban,Chris_Kenward,27-31-7655045,9600,CM,HST

,5,The_Chatterbox,Durban,Richard_Pillay,27-31-2693728,9600,101,HST,V42b

,6,Honey_in_the_ROCK!!!,Durban,Melvain_Donyes,27-31-4631709,2400,CM,XA

,7,Programmers_Paradise,Durban,Greg_Mahlknecht,27-31-7643377,2400,CM,XA;

Host,7104,Algoa_Net,Port_Elizabeth,Bryan_Haeefe,27-41-662491,9600,CM,HST,V32b,V42b,XA

,1,The_Catalyst_BBS_1,Port_Elizabeth,Hank_Wolsink,27-41-341122,9600,CM,HST,XA

,2,The_Catalyst_BBS,Port_Elizabeth,Henk_Wolsink,27-41-342859,9600,CM,HST,V32b,V42b,XA,EUUCP

,3,Mad_Dog_Opus,Port_Elizabeth,Bryan_Haeefe,27-41-662491,9600,CM,HST,V32b,V42b,XA

,4,Settler_City_Fido,Grahamstown,Dave_Wilson,27-461-311085,9600,CM,MO,V32

,6,PE_Tech_BBS,Port_Elizabeth,Renaldo_Rheeder,27-41-534278,9600,CM,HST,V32b,V42b

,8,The_Star_BBS,East_London,Trevor_Angus,27-431-372553,2400,CM

,9,Big_Mac_Opus,Port_Elizabeth,Dave_McEwen,27-41-333113,2400,CM,XC;

Host,7105,Ofs/N.Cape/W.Tvl,Welkom,Niel_Uys,27-171-84102,9600,CM,HST,V32b,V42b,XA

,1,Goldfields_1,Welkom,Niel_Uys,27-171-84102,9600,CM,HST,V32b,V42b,XA

,2,Goldfields_2,Welkom,Niel_Uys,27-171-81157,9600,CM,HST,V32b,V42b,XA

,6,Bombed_Out,Klerksdorp,Charl_Cilliers,27-18-86524,9600,CM,HST,V32b,V42b,XX

,7,Double_Helix,Bloemfontein,Richard_Hawkins,27-51-214776,9600,CM,CSP,V32b,XA

,8,Quantum,Potchefstroom,Tiaan_Van_Aardt,27-148-6469,2400,CM,XX;

Region,72,ZIMBABWE,Harare,Phillip_Nyahoda,263-4-728797,9600,CM,MO,PEP;

Host,721,Zimbabwe,Harare,Phillip_Nyahoda,263-4-728797,9600,CM,MO,PEP

,1,Mango,Harare,Phillip_Nyahoda,263-4-728797,9600,CM,MO,PEP;

Host,726,Mauritius,Reduit,Michael_Dewson,230-464-1773,2400,CM

,1,UMCC,Reduit,Michael_Dewson,230-464-1773,2400,CM;

Region,73,KENYA,Nairobi,Doug_Rigby,254-2-567043,9600,CM,PEP;

Host,731,Kenya,Nairobi,Doug_Rigby,254-2-567043,9600,CM,PEP

,1,ELC,Nairobi,Doug_Rigby,254-2-567043,9600,CM,PEP;

Host,7321,Uganda,Kampala,Charles_Musisi,256-41-532440,2400,

,1,Mukeker_University,Kampala,Charles_Musisi,256-41-532440,2400,;

Region,75,ETHIOPIA,Addis_Ababa,Lishan_Adam,251-1-514412,9600,CM,PEP;

Host,751,Ethiopia,Addis_Ababa,Lishan_Adam,251-1-514412,9600,CM,PEP

,1,PADISnet,Addis_Ababa,Lishan_Adam,251-1-514412,9600,CM,PEP;

Region,76,ZAMBIA,Lusaka,Mark_Bennett,260-1-252891,9600,CM,V32;

Host,761,Zambia,Lusaka,Mark_Bennett,260-1-252891,9600,CM,V32

,1,UNZA,Lusaka,Mark_Bennett,260-1-252891,9600,CM,V32;

Region,77,FRENCH-WEST-AFRICA,Dakar_Senegal,Moussa_Fall,221-21-7627,9600,CM,PEP,V32;

Host,7711,Senegal,Dakar,Moussa_Fall,221-21-7627,9600,CM,PEP,V32

,1,ENDA,Dakar,Moussa_Fall,221-21-7627,9600,CM,PEP,V32

Appendix F

U.S. African-related BBSs

Date: 01 Oct 92 15:15:26 EDT
 From: "Arthur R. McGee" <72377.1351@CompuServe.COM>
 Subject: Updated African and African American BBS List!

NAME	NUMBER	BAUD	NETWORK
Afra-Span	404 270-5522,23	2400	
African Civilization	510 623-8744	2400	
African Exchange	Down til Dec	14400	1:207/212
AfroConnections	613 829-5409	2400	1:163/511
Alex's Place	213 937-8734	2400	1:102/744
Ashanti	718 634-4175	2400	
Baobab	202 296-9790	14400	1:109/151
BatCave	904 384-2112	14400	
BDPA Atlanta	404 344-0277	9600	#914 ->FUNSOFT*
BDPA Baltimore	410 256-0170	2400	1:261/1082
BDPA Bay Area	707 552-3314	9600	
BDPA Chicago	312 326-4750	2400	
BDPA Dallas	214 517-7254	2400	#1388 ->MINORITY*
BDPA Detroit	313 864-2372	2400	
BDPA New York	718 592-7156	2400	
BDPA Philadelphia	215 365-8858	2400	
BDPA Washington, D.C.	301 294-9578	2400	
Black Boy(1)	215 844-8145	2400	
Black Boy(2)	215 844-8146	9600	
BlackBoard Int'l	416 599-1707	2400	
The BlackNet	718 692-0943	14400	1:278/618
Boardroom(IABPFF)	201 923-3967	2400	1:107/819
CPTIME Online	213 732-7923	Voice	
Ebony Shack(1)	419 241-4600	2400	
Ebony Shack(2)	419 241-4286	9600	
FEDIX	800 232-4879	9600	
IMHOTEP	718 297-4829	2400	
Infinity Gauntlet	510 229-5378	2400	WWIVlink@15066
L.A. Music Magazine	213 733-8847	9600	
Linkages	510 547-2162	2400	
Lost Atlantis	201 926-5689	14400	
MOLIS	800 626-6547	9600	
National Technical Assn.	612 458-1151	2400	
NE Regional Comm(IABPFF)	201 373-0074	2400	1:107/811
P-Funk OnLine	818 793-9155	2400	
Sierra Hotel	213 226-0133	2400	VNet 1@2132
Southern Africa Link	206 322-3305	2400	
Third World	818 700-9591	2400	1:102/803
U of WI(African Studies)	608 262-9689	2400	1:121/25.3
U-People	606 268-0801	9600	GT Net 032/006
Vulcan-Net(IABPFF)	908 769-7882	2400	1:107/918
Westwood Storyboard	213 295-2084	2400	
Workstation	312 404-2824	2400	1:115/404