

*to app. C Multi-Coop
Nov 92*

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES ARMY CORPS OF ENGINEERS
AND OTHER FEDERAL AGENCIES
FOR CONTINUED DEVELOPMENT OF
THE GEOGRAPHIC RESOURCES ANALYSIS SUPPORT SYSTEM**

PURPOSE AND AUTHORITY

This Memorandum of Understanding (MOU) is entered into by and between the United States Army Corps of Engineers (USACE) and the other signatory Federal agencies for the purpose of establishing the respective responsibilities of the parties for carrying out a coordinated research, development and support effort related to Geographic Information Systems (GIS) technology and specifically the Geographic Resources Analysis Support System (GRASS) software. While this coordination is primarily focused on integration of U.S. Federal agencies activities, a secondary focus is to improve worldwide coordination of GRASS related activities in the academic community, the private sector and user groups. This MOU is entered into under the authority of the Economy in Government Act, 31 U.S.C. 1535. The Congress authorized the Army to manage its environmental, natural and cultural resources on Army installations in an efficient manner and also authorized USACE to do the same for its civil works funded projects and missions through such legislation as the National Environmental Policy Act (P.L. 91-190) and the Water Resources Development Act of 1986 (P.L. 99-662). Although these Public Laws have not specifically authorized the Army and USACE to develop GRASS, they have authorized them to conduct activities which are most effectively accomplished by the development and use of GRASS.

BACKGROUND

GRASS is a public domain GIS with image processing capabilities which was originally developed by the U.S. Army Construction Engineering Research Laboratory (USACERL), in Champaign, Illinois. In pursuit of multi-agency cooperation and exchange of funds and personnel among users, USACERL joined with several other agencies and organized an informal committee. This committee is chaired by USACERL and coordinates Federal GRASS related activities. As a result, GRASS is currently being further developed, supported, enhanced and fielded jointly by several U.S. government agencies.

The U.S. Department of Agriculture, Soil Conservation Service (SCS), one of the primary members of the committee, has adopted GRASS as its nationally supported GIS software. SCS believes it is incumbent on members of the committee to enter into a formal arrangement with USACE to encourage continuing these closely coordinated efforts to enhance GRASS.

ENCLOSURE

SCOPE

The scope of this MOU is to provide a mechanism for the participating agencies to provide funds and personnel (without reimbursement by USACE for such personnel) to USACE as identified in annual work plans (to be developed each year by the signatory agencies through the coordinating committee described below) for the purpose of coordinating software enhancements and data relating to GRASS. For maximum benefit to participating agencies, annual work plans need to insure that:

- 1) enhancements to GRASS are coordinated and integrated,
- 2) duplication of efforts between agencies is avoided,
- 3) all new software meets GRASS programming, documentation and user interface standards,
- 4) GRASS formatted data can easily be exchanged between agencies, and
- 5) GRASS software remains an open, viable and effective tool for those agencies who have elected to pursue its continued and extended use.

GRASS INTERAGENCY COORDINATING COMMITTEE (GIACC) and USACE OFFICE OF GRASS INTEGRATION (OGI)

Signatory agencies acknowledge the need for a GIACC and USACE OGI with explicit responsibility for GRASS, agree to a multi-agency approach to establishing and participating in the GIACC, and agree to provide funding and personnel (without reimbursement by USACE for such personnel) to the USACE OGI at USACERL commensurate with benefits received. The GIACC will consist of a representative of each signatory agency. USACERL will chair the GIACC and establish the USACE OGI at USACERL to support GRASS in accordance with the goals established by the GIACC. The GIACC is not budgeted for its activities and the recommendations of the GIACC are considered to be for purposes of coordination of activities pursuant to this MOU. Responsibilities of the GIACC include:

- 1) coordinating the activities of the GRASS software development, distribution, and GRASS database sharing,
- 2) reviewing the annual work plan, budget and priorities for the USACE OGI and suggesting which member agencies should participate in coordinated efforts,
- 3) recommending the appropriate funding and personnel from member agencies commensurate with benefits received, and
- 4) coordinating with other related groups, such as The Open GRASS Foundation.

RESOURCE CONTRIBUTIONS

GIACC - Member agency's participation in the GIACC will be funded by the respective agency.

USACE OGI - The USACE OGI will be supported by USACE and funds and personnel provided by the signatory agencies pursuant to annual work plans and concomitant funding. It is anticipated that an average of five additional workyears each year for five years will be required at USACERL. Nothing in this MOU shall be construed to require USACE to request, budget or obligate funds for the purpose of this MOU, nor to obligate any funds which have not been authorized and appropriated for this purpose.

PATENT, LICENSE AND ROYALTY PROVISIONS

It is the intent of the signatories that all GRASS software and product developers be required to grant their rights to the other signatory agencies for any patents, licenses and royalties for software and products developed pursuant to this MOU, with the effect that all signatories shall maintain royalty-free licenses for unlimited application, modification or other use for Government purposes.

The following conditions apply to GRASS software and products developed in each agency pursuant to this MOU for distribution outside the Federal sector.

Each agency shall have the sole right and responsibility to apply for, obtain, and maintain patents or other forms of protection in the United States or other countries for technology or intellectual property developed in such agency pursuant to this MOU.

Royalties - Each agency shall retain any royalties or other income from any patents or other protection to the extent required to offset payments to inventors under clause (i) of paragraph (1)(A) of section 3710C of Title 15 U.S.C. and the payments of expenses incidental to the administration and licensing of such patents or protection. Any royalty and other income remaining after such payments shall be transferred for distribution in accordance with clauses (i) through (iv) of paragraph (1)(B) of section 3710C of Title 15 U.S.C.

Licenses - Each agency shall have the sole right and responsibility to grant nonexclusive, exclusive, or partially exclusive licenses under any such patent application, patent, or other form of protection obtained royalty-free or for royalties or other consideration, and on such terms and conditions determined by such agency in the public interest.

TECHNOLOGY TRANSFER

It is understood and agreed that, consistent with security requirements, the parties to this MOU will actively pursue opportunities for transfer of any technology developed pursuant to this MOU to the private sector as required by the Stevenson-Wylder Technology Innovation Act of 1980, as amended (15 U.S.C. 3701-3715) and Executive Orders 12591 and 12618.

EFFECTIVE DATE, AMENDMENT AND TERMINATION

This MOU is effective upon the date of the second agency signature. Other agencies can join in this MOU by affixing their signatures. The terms of this MOU may be modified or amended only by written agreement between all participating agencies. Either the USACE or any other agency involved may terminate their participation in this MOU by providing sixty calendar days written notice to the Chair of the GIACC.

U.S. Department of the Army
Corps of Engineers

By: Arthur E. Williams

Name: Arthur E. Williams
Lieutenant General, U.S. Army

Title: Chief of Engineers

Date: 23 Sept. 1992

U.S. Department of Agriculture
Soil Conservation Service

By: William Richards

Name: William Richards
(PRINT)

Title: Chief

Date: Dec. 4, 1992

U.S. Department of Interior
U.S. Geological Survey

By: Dallas L. Peck

Name: Dallas L. Peck
(PRINT)

Title: Director
U.S. Geological Survey

Date: Nov. 24, 1992

U.S. Department of Interior
National Park Service

By: James M. Ridenour

Name: James M. Ridenour
(PRINT)

Title: Director
National Park Service

Date: Nov. 24, 1992

Rec. Approval

21 SEP 1992

122

ColS 119/23
DCG 023
CG 122

MEMORANDUM FOR COMMANDING GENERAL

SUBJECT: Memorandum of Understanding (MOU) With Other Federal Agencies for Continued Development of the Geographic Resources Analysis Support System (GRASS) -- ACTION MEMORANDUM

1. PROBLEM: To sign and execute a MOU with other Federal agencies to continue enhancements of the Geographic Information System (GIS) developed by the U.S. Army Construction Engineering Research Laboratory (CERL), known as GRASS.

2. RECOMMENDATION: That the CG sign the MOU at the SIGNATURE TAB which establishes a mechanism for other Federal agencies to provide funds and personnel to USACE for the purpose of coordinating software enhancements and data relating to GRASS.

APPROVED: ✓ DISAPPROVED: _____ SEE ME: _____

3. BACKGROUND:

a. GRASS is a public domain GIS with image processing capabilities which was originally developed by CERL. The first version of GRASS was released in 1985 to three military installations. The latest version was released in 1991 to over 100 Army organizations and several thousands users worldwide. It has become an important GIS and spatial database for various applications on Army installations and at Corps field offices. It is a major element of the Integrated Training Area Management (ITAM) program, which has been adopted as the Army's program for inventory, monitoring, restoration and management of training and testing lands. It is also an element of the Army Automated Environmental Management Information System (AAEMIS), which is the family of systems and databases developed to support environmental compliance requirements.

b. GRASS is also used to support the Corps Civil Works program. It has been interfaced with the Regulatory Analysis Management System (RAMS) to help support permit evaluation activities and was selected as the GIS for the Emergency Response Management System. It has also been ported to the CDC 4000 computers and is being benchmarked by the CEAP management office for applications as the "District-wide" GIS running on standard Corps hardware. Efforts are also underway to further link the hydrological engineering models with GRASS for flood damage prediction and prevention applications.

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SUBJECT: Memorandum of Understanding (MOU) With Other Federal Agencies for Continued Development of the Geographic Resources Analysis Support System (GRASS) -- ACTION MEMORANDUM

c. GRASS is also used by several other Federal agencies either as a nationally supported standard or to meet specific requirements that are not part of an agency standard. The primary agencies include: Dept. of Agriculture, Soil Conservation Service (SCS); Dept. of Interior, National Park Service (NPS) and Geological Survey (USGS); Dept. of Air Force (for aircraft noise data); and Dept. of Commerce, National Oceanic and Atmospheric Administration (NOAA) (for global environmental data).

4. DISCUSSION:

a. Since hardware platforms, operating systems, user interfaces, data sources and associated software are constantly evolving, GRASS must be continuously enhanced or it will become obsolete. To help sustain funding for needed enhancements to GRASS and to pursue multi-agency cooperation among users in making these enhancements, CERL joined with several other agencies and organized an informal committee. This committee, chaired by CERL, coordinates Federal GRASS related activities. As a result, continued enhancements of GRASS are currently being funded by several Federal agencies with coordination by the committee. Other Federal agencies are currently contributing \$250,000 annually to this effort, which could increase to \$1-2 million in future years. The anticipated FY93 funding is as follows:

Army (civil works) Numerical Model Support Program	75,000
Department of Agriculture, Soil Conservation Service (SCS)	200,000
Department of Interior, National Park Service (NPS)	50,000
Department of Interior, U.S. Geological Survey (USGS)	100,000
Air Force (Assessment System for Aircraft Noise)	50,000
Others (not yet specified)	200,000

	\$675,000

b. The members of the committee believe it would be beneficial to enter into a formal arrangement with USACE to ensure that closely coordinated efforts and funding to USACE to support GRASS are continued. The SCS, NPS, USGS and Air Force are prepared to sign the MOU and provide funding to USACE in FY92. The Dept. of Energy, Environmental Protection Agency, Navy, National Aeronautical & Space Administration, NOAA's National Geophysical Data Center, Fish and Wildlife Service, Forest Service, Bureau of Census, Agriculture Stabilization and Conservation Service, Agriculture Research Service, and the Federal Bureau of Investigations are also evaluating participation in the MOU.

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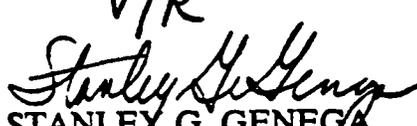
c. The CG has been delegated the authority to sign and execute MOUs for support to other Federal agencies by the ASA(CW) where the work effort will be less than 25 workyears. This MOU is within these constraints, currently estimated at five workyears annually. It should also be noted that the MOU is not just with one agency or with a fixed number of agencies, but is left open so that other agencies that chose to provide funds to USACE for this effort in the future could add their signatures to the MOU.

5. IMPACTS: This effort will involve a contribution of \$75,000 from the Civil Works program. The Civil Works amount would start in FY93 and be funded from the "Numerical Model Support Program" which is a "bill back" administered by the Research and Development Directorate. It is anticipated that an average of five additional workyears each year for five years will be required at USACERL. If GRASS is not continuously enhanced, these other agencies, as well as the Army, could be severely impacted in terms of program execution and computer software and hardware budgets.

6. COORDINATION:

CECC-ZA	Concur/ None neur	EDELMEN (Name)	(L.E.)	7/07/92 (Date)
CERD-ZA	Concur/ None neur	ROPER (Name)	(W.E.R.)	6/18/92 (Date)
CECW-ZI	Concur/ None neur	KISICKI (Name)	(D.K.)	5/29/92 (Date)
CEHSC-ZA	Concur/ None neur	WATLING (Name)	(E.T.W.)	9/18/92 (Date)
DAEN-ZCI	Concur/ None neur	YENTZER (Name)	(D.A.Y)	7/06/92 (Date)
CEMP-ZA	Concur/ None neur	CARTON (Name)	(A.M.C.)	6/16/92 (Date)
CECW-E	Concur/ None neur	BARBER (Name)	(P.D.B.)	6/15/92 (Date)
CECW-B	Concur/ None neur	DEVICK (Name)	(L.L.D.)	6/26/92 (Date)
CECW-O	Concur/ None neur	CREWS (Name)	(J.E.C.)	5/28/92 (Date)
CECW-P	Concur/ None neur	LOCKWOOD (Name)	(W.L.L.)	5/28/92 (Date)
CEZP	Concur/ None neur	SPIVEY (Name)	(D.A.S.)	5/27/92 (Date)
CEIM-ZA	Concur/ None neur	RICKS (Name)	(B.J.R.)	6/05/92 (Date)

Encl

V/R

STANLEY G. GENEGA
Brigadier General (P), USA
Director of Civil Works

M.K. MILES
CECW-EP-S/28885