08:33:21 OCA PAD AMENDMENT - PROJECT HEADER INFORMATION 08/03/93

Active

Project #: B-16-F21 Cost share #: B-16-369 Rev #: 1
Center # : 10/24-6-R7376-0A1 Center shr #: 10/22-1-F7376-0A1 OCA file #:
Work type : RES
Contract#: AGREEMENT NO. A91340-00 Mod #: ADMIN. Document : AGR
Prime #: Contract entity: GTRC

Subprojects ? : N CFDA: NA
Main project #: PE #: NA

Project unit: MMTL Unit code: 03.010.216
Project director(s):
DYER F B OOD (404)894-3539

Sponsor/division names: IBM CORPORATION /
Sponsor/division codes: 208 / 001

Award period: 911025 to 941024 (performance) 941215 (reports)

Sponsor amount	New this change	Total to date
Contract value	0.00	50,000.00
Funded	0.00	50,000.00
Cost sharing amount		50,000.00

Does subcontracting plan apply ?: N

Title: IBM MULTIMEDIA CENTER

PROJECT ADMINISTRATION DATA

OCA contact: William F. Brown 894-4820

Sponsor technical contact

MARSHALL S. GERSTEL
(404)238-3987

IBM, MULTIMEDIA & EDUCATION DIVISION
4111 NORTHSIDE PARKWAY
P.O. BOX 2150
ATLANTA, GA 30327

Sponsor issuing office

R. L. (RON) QUARANTINO
(404)835-8237

IBM,ATLANTA REGIONAL CONTRACTING CTR
INDUSTRIAL SECTOR DIVISION
3200 WINDY HILL ROAD
MARIETTA, GA 30067
FAX NO. 404/835-8226

Security class (U,C,S,TS) : U ONR resident rep. is ACO (Y/N): N
Defense priority rating : NA NA supplemental sheet
Equipment title vests with: Sponsor GIT X

Administrative comments -
CHANGE IN PROJECT & C/S # FROM B-10... PREFIX TO B-16... & CHANGE IN CENTER #
AND UNIT CODE SINCE MULTI-MEDIA TECHNOLOGY LAB IS ESTAB. AS SEPARATE COST CTR.

SR428

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 12/15/94

Project No. B-16-F21_____ Center No. 10/24-6-R7376-0A1_

Project Director DYER F B_____ School/Lab MULTIMEDIA_____

Sponsor IBM CORPORATION/_____

Contract/Grant No. AGREEMENT NO. A91340-00_____ Contract Entity GTRC

Prime Contract No. _____

Title IBM MULTIMEDIA CENTER_____

Effective Completion Date 941024 (Performance) 941215 (Reports)

Closeout Actions Required:	Y/N	Date Submitted
Final Invoice or Copy of Final Invoice	N	_____
Final Report of Inventions and/or Subcontracts	N	_____
Government Property Inventory & Related Certificate	N	_____
Classified Material Certificate	N	_____
Release and Assignment	N	_____
Other _____	N	_____

Comments_____

_____

Subproject Under Main Project No. _____

Continues Project No. _____

Distribution Required:

Project Director	Y
Administrative Network Representative	Y
GTRI Accounting/Grants and Contracts	Y
Procurement/Supply Services	Y
Research Property Managment	Y
Research Security Services	N
Reports Coordinator (OCA)	Y
GTRC	Y
Project File	Y
Other _____	N
_____	N

B-10-F21

Georgia Tech

Frederick B. Dyer
Office of Interdisciplinary Programs
Multimedia Technology Laboratory

Georgia Institute of Technology
Atlanta, Georgia 30332-0370
404-894-3539
404-894-7339 FAX

April 27, 1992

INTERNATIONAL BUSINESS MACHINE CORPORATION
Multimedia & Education Division
4111 Northside Parkway
P.O. Box 2150
Atlanta, GA 30327

Attention: Mr. Marshall S. Gerstel
Program Administrator

Subject: Quarterly Progress Report on IBM Multimedia Laboratory Project
GIT Project Reference: B-10-F21
Report #1, 10/25/91 thru 12/31/91

Dear Marshall:

Although we agreed that a progress report would not be required for this first period, I have found it necessary in order to fulfill the delivery schedules of the contract. Since the actual delivery of the funding did not take place until January 1992, we did not begin development of the laboratory until that time. Since the equipment you provided did arrive during this period, we were able to set up and evaluate the overall capabilities of the provided systems. The short falls were noted to you and Michelle Francis. Permission was obtained to establish the IBM Multimedia laboratory in the Centennial Research Building, room 344, during this period and preparation of the facility was initiated.

We continue be very excited by the opportunities associated with our new project and look forward to a long and useful relationship with the IBM Multimedia and Education Division. Again, thank you for your help and support.

Yours truly,

B-10-F21

Georgia Tech

Frederick B. Dyer
Office of Interdisciplinary Programs
Multimedia Technology Laboratory

Georgia Institute of Technology
Atlanta, Georgia 30332-0370
404-894-3539
404-894-7339 FAX

April 27, 1992

INTERNATIONAL BUSINESS MACHINE CORPORATION
Multimedia & Education Division
4111 Northside Parkway
P.O. Box 2150
Atlanta, GA 30327

Attention: Mr. Marshall S. Gerstel
Program Administrator

Subject: Quarterly Progress Report on IBM Multimedia Laboratory Project
GIT Project Reference: B-10-F21
Report #2, 1/01/92 thru 3/31/92

Dear Marshall:

As reported during the last progress report period, work was initiated on the new laboratory facility in CRB 344. The basic facility is now ready. There is still some network wiring required to fully link the equipment in room 344 to the rest of the Multimedia Technology Laboratory facilities; however, that should be accomplished during the next contractual period. Planning meeting have been held with Michelle Francis and others during this period. Third-party equipment has been ordered, using the matching funding provided by the Institute and some of the new IBM software and updated equipment has been received. Initial investigations of the new Action Media II seem very positive.

A demonstration project, based on the work we did for the JASON Foundation, is planned for an illustration of the use of the Action Media II. Ultimately a full DVI disc development is planned, based primarily on this material. Initial discussions have been held with Pete McGuire, LCC, regarding the possibility of his students using the laboratory for other demonstration projects and for a learning opportunity.

We continue be very excited by the opportunities associated with our new project and look forward to a long and useful relationship with the IBM Multimedia and Education Division. Again, thank you for your help and support.

Yours truly,

B10-F21

Georgia Tech

Frederick B. Dyer
Multimedia Technology Laboratory
Office of Interdisciplinary Programs

Georgia Institute of Technology
Atlanta, Georgia 30332-0370 USA
404-894-3539
404-894-7339 FAX

2,3,4,5,

March 22, 1993

INTERNATIONAL BUSINESS MACHINE CORPORATION
Multimedia & Education Division
4111 Northside Parkway
P.O. Box 2150
Atlanta, GA 30327

Attention: Ms. MICHELLE FRANCES
Program Administrator

Subject: Progress Report on IBM Multimedia Laboratory Project
GIT Project Reference: **B-10-F21**
First Year Summary Project Report, 12/01/91 through 12/31/92,
including Quarterly Reports #2 through #5

Dear Michelle:

Although you have generally stayed in contact with our work via your meetings and telephone calls with Ed Price, I have found it necessary to provide you with these letters in order to fulfill the delivery schedules of the contract. By way of background, since the actual delivery of the funding did not take place until January 1992, we did not begin development of the laboratory until that time. Since the equipment you provided did arrive during this period, we were able to set up and evaluate the overall capabilities of the provided systems. The short falls were noted Mr. Gerstel and you. Permission was obtained to establish the IBM Multimedia laboratory in the Centennial Research Building, room 344, during this period and preparation of the facility was initiated.

Although we had a relatively slow beginning, this first year has been both busy and rewarding. As one strong indication of the impact of this laboratory's level of activity, we have averaged approximately two visits a month during the first year from various IBM groups and/or IBM customers. Visits are continuing at a slightly slower pace this current year; however, we believe that the overall pace will be similar to last year's. Of course we have also demonstrated and/or showcased the laboratory to many others who have visited us during the past year.

Perhaps the single most critical issue for the long term is the fact that the existing computer facilities no longer represent the State of the Art of IBM Multimedia and there is currently no mechanism for renewing those facilities. We will continue to seek ways to upgrade the overall laboratory, as we have discussed

previously; however, it would be very desirable if a specific, long-range strategy for the laboratory could be developed. We would welcome the opportunity to meet with you and others to explore the possibilities.

While there are a number of ways of documenting activities, I have chosen to summarize the activities on a project by project basis in the paragraphs that follow. Since you have make frequent visits to our laboratory and are in close contact with us, I have chosen to incorporate information that might have otherwise been reported in quarterly reports into this first's year summary report. If you or others at IBM would like more details on any of the specific projects, we would be pleased to provide them for you.

Georgia Games

The 1992 Georgia Games were a major activity of the lab. The lab designed an interactive information kiosk for the Games. Six kiosks, running on IBM PS/2's, were placed on the Georgia Tech campus during the games. The system provided scores, schedules, maps and information about the games. The kiosks were networked over the GT network back to an IBM RS/6000 file server that kept the kiosks continually updated. Several additional machines loaned by IBM were used for a scoring system. The scoring system also networked to the RS/6000, and was used not only to provide scores to the kiosks but to electronically transmit scores to newspapers. The Atlanta Journal/Constitution did a short article about the system and some aspects of the work appeared in other publications. IBM provided a video crew out to film the Games Events for internal PR use, and, as you know, since you were the "Star", IBM also created a short video segment for its internal information network which showcased our laboratory, the Kiosk work, illustrated by you and several students working with the facility.

We hope to continue and expand this program for the 1993 Georgia Games. We currently hope to use IBM's new kiosk for the games, and to improve the scoring system to make scoring almost automatic. The Georgia Games Commission has requested that we continue to provide these services through the 1995 Georgia Games, and for the 1996 GA Games, if they are in Atlanta. There are many areas for including state-of-the-art IBM equipment, including wireless connectivity and software video. For example, the system could contain video clips of highlights of events and other unique demonstrations of technology. In addition, we would like to explore the possible use of IBM wireless technology, such as the PC Radio, for use in supporting the many remote sport sites around the Metro area. In that connection, we have demonstrated this work to several different groups within IBM and are involved in discussions of possible collaborative activities.

Geometry Education Project

The lab continued work on our Geometry Student Workstation in the IBM

lab. This system distributes the 3D graphics processing of an IBM RS/6000 to many students using low cost, video-based, desktop units. The system also runs on an IBM PS/2 using an IBM M-Motion card, if a school already has an existing computer lab. The current prototype is designed to allow up to 6 students share the power of the RS/6000 for a variety of mathematical applications. The current demonstration application is designed to help a student to gain a better understanding of solid geometry by allowing the student to manipulate in real time key aspects of the fundamental conic sections. For example, in one demonstration, the intersection of a cone/sphere/etc. with a plane can be explored by the student, perhaps by adjusting the parameters of the equations of the plane and thus seeing how the resultant conic section under investigation changes.

A revised demonstration video tape is currently being prepared to showcase this project to key educators and potential collaborators. The video program illustrates the powerful teaching tools that can result from the linking of video and computer technologies, and, of course, features the use of the IBM RS/6000 as a "compute engine" for this and other sophisticated educational applications.

Jason Interactive Video

The lab developed, in conjunction with Turner Productions, an interactive learning system about the Galapagos Islands. The system uses IBM's ActionMedia II board in an IBM PS/2. The system takes the video from the Jason Foundation's 2 weeks of live broadcasts to science museums and provides a compelling, media rich environment that can be used year round. We have completed a prototype and are exploring commercialization with TBS. If successful, we plan to build similar systems for other Jason Expeditions and other, similar, science/education programs.

DVI Authoring System

Denon Digital Industries of Madison, GA has provided the lab with a grant to develop DOS based authoring tools for DVI. The current Action Media II Environment has excellent tools for OS/2 PM, but the tools for DOS are somewhat lacking. Also, most of the DOS based tools available require a powerful machine based on 386 or 486 processors. We will be developing an authoring system that will be capable of authoring for a base 286 machine, using CD-ROM as a boot device. This will provide a low cost delivery platform for DVI multimedia, such as the aforementioned Jason project.

Capabilities of the Lab

The lab contains 8 IBM PS/2's, and 2 IBM RS/6000's. All machines are connected with Ethernet to each other and the GT Network. The lab contains a wide

variety of multimedia hardware, including several videodisc players, a MIDI synthesizer, color video cameras, 2 ActionMedia II Capture stations, a VGA Scan Converter, and a Color LCD Projector. Additional hardware includes IBM Audio Playback and Capture Adapters, IBM Video Capture Adapters, IBM M-Motion Overlay Boards, Videologic DVA-4000 Video Overlay Boards, MIDI interface boards. All audio capable stations are equipped with a pair of stereo speakers.

A wide variety of software is available in the lab, running on DOS, Windows, and OS/2 1.3 and 2.0. IBM products include Linkway Live!, Storyboard Live!, and Audio-Visual Connection (AVC). Other software includes Toolbook, MediaScript, Cakewalk Pro, Autocad, and Microsoft C. In addition, Wavefront Advanced Visualizer is available for the RS/6000. As funding and appropriate requirements are identified, other software and hardware tools will be added to the laboratory.

Educational Collaboration

One of the areas we had hoped to have initiated by now involves interactions with the educational units of the Institute, particularly the Department of Literature, Communications, and Culture (LCC), which offer Georgia Tech students the foundation courses which are needed to properly apply such technologies as multimedia. Unfortunately, the level of interaction has been relatively modest to date, with the primary effort being associated with a series of introductory short courses in multimedia concepts.

We are working with other various academic groups and within the limitations of available resources are continuing to encourage a growth in interactions in this area. For example, working relationships with the College of Computing (CoC), particularly with the Graphics, Visualization, and Usability Center (GVUC) have grown extensively during the past year and is anticipated to continue to grow during the coming year. We are also working with various individuals and other academic units, such as Architecture, on specific projects.

We continue be very excited by the opportunities associated with our new project and look forward to a long and useful relationship with the IBM Multimedia and Education Division. Again, thank you for your help and support.

Yours truly,

B-16-F21
9, 10, 11, 12
6 of 7,8

Georgia Tech

Frederick B. Dyer
GCATT - Georgia Center for Advanced Telecommunications Technology

Georgia Institute of Technology
Atlanta, Georgia 30332-0370 USA
404-894-3539
404-894-7339 FAX

March 31, 1994

INTERNATIONAL BUSINESS MACHINE CORPORATION
Multimedia Division
4111 Northside Parkway
P.O. Box 2150
Atlanta, GA 30327

Attention: Mr. Marshal Gerstel
Program Administrator

Subject: Progress Report on IBM Multimedia Laboratory Project:
a. GIT Project Reference: **B-16-F21 (Deliverables #6 through #12)**
b. Second Year Summary Project Report, 12/01/92 through 12/31/93,
c. Including Quarterly Reports #6 through #9 (year 2)
d. Including Quarterly Reports #11 and #12 (year 3)

Dear Marshal:

It is that time again. During this past year and a half we have had very little research activity associated with the IBM supported laboratory. On the other hand, we have hosted several tours of IBM and other visitors during this period and have continued to make use of some of the equipment in support of various Kiosk and education related projects.

We are again preparing for the State Games in which we expect to provide even more technology support than we did last year. We anticipate that we will be to have a network of improved Kiosks, the centralized results/scoring systems for most of the venues of the Games which we initially demonstrated last summer, and a "true" wireless access Kiosk. We will again be using equipment from the multimedia lab in support of this effort. Unfortunately the IBM External Programs people (Carl Moore) were unable to provide additional equipment (loaned) to allow us to initiate the investigation of the use of wireless technology last year; however, we are exploring alternatives.

The extensive series of short courses in Multimedia begun early last year has now reached a major level, with significant expansions in both topics and attendance. As before, we are primarily working with the people in our Literature, Communications, and Culture (LCC) Department (previously the English Department) and our Continuing Education Department. I have again approached Dr. Pete McGuire regarding cross training of some of his students in our labs. As reported previously, Dr. McGuire is supportive of the goals we originally proposed in that

regard; however, he feels that to effectively justify teaching IBM multimedia routinely to their students, it is necessary to have at least some IBM equipment in their location. Therefore, at this time, we are still not able to make any further progress in this area except on individual cases.

In addition, as mentioned previously, the equipment you so kindly provided us for the lab is now clearly out of date, particularly when compared with IBM's latest offerings. While we certainly understand the difficulties your group is faced with at the moment, I would feel remiss if I didn't continue to call attention to these issues. I believe we can continue to do some things with the lab as it now exists; however, it really doesn't showcase your products to our Tech students and our steady stream of visitors in the manner we envisioned at the outset of the program.

As mentioned before, we were approached by Ron Palmich regarding working together with IBM and others on one of the ACOG Kiosk projects, which we have contributed to, beginning last August. We continue to work with John Ernst and others on the completion and deployment of the initial version of the Kiosk, which will be used in a pre-games public information role.

We continue to welcome any opportunity to develop closer associations with IBM and will continue to explore any reasonable working relationships. We would certainly be pleased to met with you, or anyone else you feel is appropriate, perhaps with a tour of our labs, etc. Again, thank you for your help and support.

Yours truly,

(FINAL) B-16-F21 13,14,15

Georgia Tech

Frederick B. Dyer
GCATT - Georgia Center for Advanced Telecommunications Technology

Georgia Institute of Technology
Atlanta, Georgia 30332-0370 USA
404-894-3539
404-894-7339 FAX

November 28, 1994

INTERNATIONAL BUSINESS MACHINE CORPORATION
Multimedia Division
4111 Northside Parkway
P.O. Box 2150
Atlanta, GA 30327

Attention: Mr. Marshal Gerstel
Program Administrator

Subject: **Final Report on IBM Multimedia Laboratory Project, including:**
(GIT Project Reference: B-16-F21)
b. Quarterly Reports (year 3) (Deliverables #13 and #14)
b. Final Summary Report (Deliverable #15)

Dear Marshal:

It is finally the time to conclude the collaborative project that you setup with us three years ago. We certainly do appreciate the efforts that you and the others in your group made on our behalf over the past several years. I regret that we have not been able to do more in return for your efforts. On the other hand, we have hosted several tours of IBM and other visitors during this period and have continued to make use of some of the equipment in support of various Kiosk and education related projects.

We did in fact support the State Games again this year and, as anticipated, Georgia Tech did provide even more technology support than we did in previous years. We anticipate that we will be to have a network of improved Kiosks, the centralized results/scoring systems for most of the venues of the Games which we initially demonstrated last summer, and a "true" wireless access Kiosk. We will again be using equipment from the multimedia lab in support of this effort. Unfortunately the IBM External Programs people (Carl Moore) were unable to provide additional equipment (loaned) to allow us to initiate the investigation of the use of wireless technology last year; however, we are exploring alternatives.

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Dr. McGuire is supportive of the goals we originally proposed in that regard; however, he feels that to effectively justify teaching IBM multimedia routinely to their students, it is necessary to have physical custody of a suitable number of IBM systems in their location. Therefore, at this time, we are still not able to make any further progress in this area except on individual cases.

In addition, as mentioned previously, the equipment you so kindly provided us for the lab is now clearly out of date, particularly when compared with IBM's latest offerings. While we certainly understand the difficulties your group is faced with at the moment, I would feel remiss if I didn't continue to call attention to these issues. I believe we can continue to do some things with the lab as it now exists; however, it really doesn't showcase your products to our Tech students and our steady stream of visitors in the manner we envisioned at the outset of the program.

As mentioned before, we were approached by Ron Palmich regarding working together with IBM and others on one of the ACOG Kiosk projects, which we have contributed to, beginning last August. We concluded our work with John Ernst and others on the completion and deployment of the initial version of the Kiosk, which will be used in a pre-games public information role. I hope you have had the opportunity to see the product, as I believe everyone (John, especially) should be proud of the final product.

We continue to welcome any opportunity to develop closer associations with IBM and will continue to explore any reasonable working relationships. We would certainly be pleased to met with you, or anyone else you feel is appropriate, perhaps with a tour of our labs, etc. Again, thank you for your help and support.

Yours truly,