

AREA I - MS
II

BST
Research Area 1

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Docket No. 920260-TL

Test Period Ended 12/31/92

November 12, 1993

II of III

DOCUMENT NUMBER-DATE

100045 JAN-38

FPSC-RECORDS/REPORTING

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Pages 1-107

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SR-INS-001797
Issue 1, January 1991

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PROPRIETARY

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0371

Southern Bell Tel. & Tel. Co.
FPSC Docket No. 920260-TL
Audit
Date: 08/16/93
Item No. 1-118
Page 1 of 1

Request: Provide the Wireless Strategy Business Plan White Paper on Network issues as described by Larry Bryant in our 8/9/93 interview.

Response: Attached is a copy of the wireless strategy business plan white paper on network issues.

This material constitutes proprietary confidential business information and is being produced subject to a "Notice of Intent to Request Confidential Classification."

Date Provided: August 31, 1993

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PAGES 110-126 Proprietary
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Southern Bell Tel. & Tel. Co.
FPSC Docket No. 920260-TL
Audit
Date: 08/16/93
Item No. 1-120
Page 1 of 1

Request: Provide the business case and Marketing Analysis for SMDS done by Bellcore as discussed by Peter Brackett in our 8/9/93 interview.

Response: Attached is a copy of SR - TSV - 002471, Issue 1, November 30, 1992 "High Speed Data Integrator Service - Opportunity Analysis" by Bellcore which is the document referred to by Peter Brackett in his interview on August 9, 1993.

This material constitutes proprietary confidential business information and is being produced subject to a "Notice of Intent to Request Confidential Classification."

Date Provided: August 31, 1993

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PAGES 128-170 are Proprietary
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Southern Bell Tel. & Tel. Co.
FPSC Docket No. 920260-TL
Audit
Date: 08/16/93
Item No. 1-123
Page 1 of 1

Request: Provide the contract that BSTI has with GTE, UNC, MCNC, CHRI for the Vista Net project.

Response: Attached is a copy of the contract between CNRI, UNC, MCNC, GTE, and BST for VISTAnet.

This material constitutes proprietary confidential business information and is being produced subject to a "Notice of Intent to Request Confidential Classification."

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SEP 1 1993

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Date Provided: August 31, 1993

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RESEARCH AGREEMENT

This Agreement is made by and between the Corporation for National Research Initiatives, a Washington, D.C. corporation with offices in Reston, Virginia, (hereinafter referred to as "CNRI"), the University of North Carolina at Chapel Hill, an agency of the State of North Carolina with offices in Chapel Hill, North Carolina, (hereinafter referred to as "UNC"), MCNC, a North Carolina corporation with offices in Research Triangle Park, North Carolina (hereinafter referred to as "MCNC"), GTE Service Corporation, a New York corporation with offices in Irving, Texas (hereinafter referred to as "GTE"), and BellSouth Services Incorporated, a Georgia corporation, with offices in Birmingham, Alabama (hereinafter referred to as "BSS").

WHEREAS, CNRI, UNC, MCNC, GTE, and BSS all desire to contribute to the success of the National Research and Education Network ("NREN") by performing highly contributive research on key networking technologies;

WHEREAS, this research will enable important collaborative research to be conducted on medical image processing and thus demonstrate the value of an NREN-like infrastructure;

WHEREAS, CNRI, UNC, MCNC, GTE, and BSS desire to enter into an agreement to conduct research on a very high bandwidth prototype network to facilitate and develop high speed, three-dimensional imaging research required to conduct interactive medical imaging research between MCNC and UNC Departments of Computer Science and Radiation Oncology;

WHEREAS, CNRI has entered into a Cooperative Agreement (No. NCR-8919038) with the National Science Foundation ("NSF") to advance scientific knowledge and engineering practice as it applies to computer communication networking technology and gigabit networks in particular and desires to provide funding for research on the prototype network;

WHEREAS, UNC has extensive expertise in computer graphics processing and display and in the design and construction of prototype microelectronic hardware systems, conducts medical research in imaging technology, and desires to design, build and operate a three dimensional image processing computer, workstations and certain interfaces for the prototype network;

WHEREAS, MCNC is a research consortium that owns and operates a Cray Y-MP Supercomputer, has substantial expertise in developing hardware and software architecture for the Supercomputer, desires to provide access and time on the Supercomputer, and desires to

support design, implementation, and operation of the prototype network;

WHEREAS, GTE and its affiliates desire to provide certain fiber optic and very high speed circuit switching facilities in the Research Triangle, North Carolina area and provide research and funding that will be applied to research costs for the prototype network;

WHEREAS, BSS and its affiliates desire to provide certain fiber optic and very high speed ATM switching services in the Chapel Hill, North Carolina area and provide research and funding that will be applied to research costs for the prototype network;

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants hereinafter set forth, the Parties hereby agree as follows:

1.0 Definitions

- 1.1 "Affiliate" means, with respect to any person, any other person which, directly or indirectly, controls, is controlled by or is under common control with such person. For purposes of this definition, "control" means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person through the ownership of voting securities or by contract.
- 1.2 "Agreement" means this Agreement executed by duly authorized representatives of UNC, MCNC, CNRI, GTE and BSS.
- 1.3 "Confidential Information" shall mean technical or business information which is of a confidential, trade secret and/or proprietary character.
- 1.4 "Derivative Work" shall mean a work of authorship which is based upon one or more pre-existing works, such as a revision, modification, translation, abridgment, condensation, expansion, or any other form in which such pre-existing work may be recast, transformed, or adapted and which, if prepared without authorization of the owner of the copyright in such pre-existing work, would constitute a copyright infringement.
- 1.5 "External Use" shall mean any using, making, having made or practicing of an Invention or any using of Software, Mask Works, Technical Data or other property by a Party or its Affiliates in (a) a machine or process used in the production of a product to be sold, leased, or otherwise distributed by a Party or its Affiliates; (b) a product sold, leased or

otherwise distributed by a Party or its Affiliates; or (c) in connection with the provision of services by a Party or its Affiliates.

- 1.6 "Firmware" shall mean Software consisting of fixed coded instructions embedded in memory circuits within hardware. Firmware shall not be deemed a part of Hardware.
- 1.7 "Grant General Conditions" is that Attachment 1 which is incorporated herein. Wherever the term "grantee" is used in the Grant General Conditions, it shall mean and refer to UNC.
- 1.8 "Hardware" shall mean the tangible equipment and/or facilities used for the Project.
- 1.9 "Internal Use" shall mean any using, making, having made or practicing of an Invention or any using of Software, Mask Works, Technical Data or other property in basic research, product development, applied research or education programs for in-house purposes and from which a Party derives no direct commercial revenue.
- 1.10 "Invention" shall mean any invention or discovery that is patentable subject matter under the United States Patent Laws 35 USC § 101 regardless whether the invention is otherwise patentable, and which is conceived or first reduced to practice in the performance of the Project.
- 1.11 "Mask Work" shall mean a series of related images that represent the three dimensional pattern or topography of a semiconductor chip, whether qualifying for statutory protection as a Mask Work or not, and which is created in the performance of the Project.
- 1.12 "Materials" shall mean the Hardware, Software and Firmware purchased, loaned and/or developed by the Parties in connection with this Project.
- 1.13 "Parties" means the entities which, through their duly authorized representatives, have executed this Agreement.
- 1.14 "Person" means an individual, firm, trust, partnership, joint venture, association, corporation, unincorporated organization, or a government or any department or agency thereof.
- 1.15 "Project" means the research, design, development, implementation, and operation of a very high bandwidth prototype network for interactive three dimensional medical imaging as defined by the Project Description.

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- 1.16 "Project Description" means the Research Plan dated February 15, 1990 (or as changed by amendment pursuant to the terms of this Agreement) and attached hereto as Attachment 2.
- 1.17 "Project Coordinator" means the Person appointed annually by the Project Council to coordinate the research, design, development, implementation and operation of the Project.
- 1.18 "Project Council" means the body that includes representatives from UNC (Radiation Oncology, Computer Science - Microelectronics Systems Laboratory, and Computer Science - Graphics Laboratory), MCNC, CNRI, GTE, and BSS, that is responsible among other functions, for developing and establishing Project procedures and priorities.
- 1.19 "Software" shall mean the computer programs consisting of logic instructions residing in or intended to be loaded in Material memories and which provide basic logic, operating instructions, user-related application instructions, but shall exclude end user/customer data which are integral to the Materials. Software herein shall include all updates and enhancements developed pursuant to the scope of this Agreement, consisting of executable Software objects, images, source codes, programs, object codes, routines, sub-routines, concepts, formulas, ideas, specifications, applications, and know-how, regardless of the physical object, article, media or documentation in or on which they are embedded.
- 1.20 "Technical Data" shall mean any and all data, concepts, know-how, flow charts, documentation used to describe, maintain, and use the programs, developments or other information developed in the performance of the Project, including any proprietary rights therein. Technical Data shall be deemed to exclude Inventions, Software and Mask Works as defined above.
- 1.21 "Work Products" shall mean any Inventions, Software, Mask Works, Technical Data, copyrightable material, and other Project results developed under this Agreement.
- 2.0 The Purpose of the Agreement.
- 2.1 The principal purpose of this Agreement shall be to define the respective Parties' responsibilities and obligations in order to carry out the Project which is more fully defined in the Project Description.
- 2.2 It is a secondary intention of the Parties that this prototype network may eventually be interconnected with other test beds that CNRI is fostering in the United States under its Cooperative Agreement with NSF.

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3.0 Term.

3.1 The term of this Agreement shall commence on June 1, 1990 and shall extend through May 31, 1993. The term of this Agreement shall be extended only upon written agreement of all Parties.

4.0 The Project Council and Project Coordinator.

4.1 A Project Council shall be established that will develop policy for guiding the various aspects of the Project. The authority of the Project Council shall include establishing group priorities and Project planning. The Project Council shall have no authority to determine the amount of funding allotted by CNRI under this Agreement. Such determination shall be under the sole discretion of CNRI as specified in Section 6.2 or otherwise in this Agreement.

4.2 Representation on the Project Council shall include Vernon Chi, Henry Fuchs, and Julian Rosenman (all from the University of North Carolina - Chapel Hill), Dan Stevenson and Alan Blatecky (MCNC), Robert Kahn (CNRI), Dean Casey and Robert Turechek (GTE), and Ken Hawkins and Niel Ranson (BSS). Other Persons from each Party may attend Project Council meetings. In the event an individual named above no longer represents the named Party, that person may be replaced on the Project Council at the sole discretion of that Party.

4.3 The Project Council shall make all decisions on a consensus basis as established in Section 4.5. CNRI, UNC, MCNC, GTE, and BSS shall have one vote each on issues that are brought to the Project Council for consideration. Parties not represented at formally designated meetings may cast their vote by proxy.

4.4 Formally scheduled meetings with advance distribution of agendas (to be received at least two weeks in advance) are planned with the meeting sites generally rotating among home sites of the participants. Formal meetings may be held in person or by telephone conference call, or by other means of communication. The Project Coordinator shall cause minutes of formal meetings to be recorded and distributed to the Project Council for approval. The approved minutes shall become the official record of the Project Council.

4.5 A quorum for formally scheduled meetings of the Project Council shall comprise representation from no less than four of the voting Parties. Consensus shall consist of unanimous agreement by the quorum in formally scheduled meetings, and by all voting Parties otherwise. Only agenda items distributed in advance in brief abstract can be decided in

formally scheduled meetings, unless the procedure for consensus for that particular item is waived unanimously by all the Parties to this Agreement. All votes in formally scheduled meetings shall be recorded in the minutes; all consensus decisions made outside formal meetings shall be documented in communiques which the Project Coordinator shall cause to be recorded and circulated to the Project Council membership.

4.6 The Project Council will appoint a Project Coordinator to set the agenda for and run council meetings and to serve as a focal point for group activities. The Project Coordinator shall be appointed annually, but can be replaced at any time by a unanimous vote of the Parties other than the Party who is associated with the Project Coordinator. In addition, the Project Coordinator shall be responsible for collecting, editing, and distributing various Project documentation and providing the Project Council with straw-man proposals for solutions to problems that arise in connection with the Project.

5.0 Amendment of Agreement and Attachments.

5.1 This Agreement and all Attachments shall be amended only by a writing signed by all Parties.

5.2 It is expected that due to the nature of the Project, the Project Description may be amended from time to time. The Party seeking the revisions shall bring the proposed revisions to the attention of the other Parties for discussion and approval. Such approval shall be in the form of an Amendment to this Agreement.

5.3 In the event that any revisions materially affecting the Project Description are such that the proposed research cannot be carried out as planned, any Party may terminate this Agreement by giving ninety days advance written notice to the other Parties. In the event of such termination, CNRI, GTE and BSS's only termination charge shall be the consideration paid or required to be paid on or before the effective date of termination.

5.4 In the event of termination, the Parties shall use their best efforts promptly to limit or terminate any outstanding commitments. These costs shall include all non-reimbursed costs and non-cancelable commitments incurred prior to the receipt of the notice of termination. All costs associated with the CNRI funds commitment and associated with such termination, including, without limitation, all non-reimbursed costs and non-cancelable commitments incurred prior to the receipt of the notice of termination, shall together, with other prior payments, not exceed the lesser of

the funds allotted to date or the allowable expenses and costs incurred to date, whichever is smaller. The maximum total amount payable to UNC and MCNC under this Agreement for any reason whatsoever (including any termination charge) is the consideration specified under Section 6.1. In addition, all warranties and other obligations incurred by the Parties under this Agreement shall survive the termination of this Agreement.

6.0 Consideration.

6.1 In full consideration of UNC's and MCNC's separately completing and satisfactorily performing under this Agreement, in accordance with the Project Description, during the term of this Agreement, CNRI, GTE and BSS agree to reimburse UNC and MCNC for their allowable expenses and costs (including overhead) incurred, not to exceed the amounts (for CNRI funds only, the lesser of the funds allotted to date or the allowable expenses and costs incurred to date, whichever is smaller) as follows:

	<u>UNC</u>		<u>MCNC</u>	
	<u>Dollars</u>	<u>Percentage</u>	<u>Dollars</u>	<u>Percentage</u>
CNRI -	\$1,300,000.00	53.5%	\$ 0	0
GTE -	\$ 564,800.00	23.25%	\$ 306,150.00	50%
BSS -	\$ 564,800.00	23.25%	\$ 306,150.00	50%

These amounts shall be reimbursed according to the terms specified in this Agreement and other relevant portions of the Agreement. In addition, CNRI, GTE and BSS may contribute Materials, instead of cash, thus reducing the cash contributions outlined herein. The Materials shall be assigned a value by unanimous consent by the Parties. Should a Party desire to contribute Materials instead of cash, that contributing Party must obtain consent (such consent shall not be unreasonably withheld) from the receiving Party regarding such Materials contribution.

6.2 The Parties hereby agree on the expenditures of funds pursuant to the three year budget attached hereto as Attachments 3A and 3B. The initial amount of funding allotted by CNRI to UNC under this Agreement is \$150,000.00. Additional funding allotted by CNRI to this Agreement will be provided incrementally and will depend upon research progress to date, the facilities then in place or developed, and will be subject to the availability of funds from the federal government. Notwithstanding any other provisions of this Agreement, CNRI shall not be obligated to reimburse UNC for costs and expenses incurred in excess of the amount currently allotted to the Agreement. At any time, CNRI may increase

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this funds allotment by notifying the Parties. This budget shall include both cash reimbursements and Materials that are expected to be contributed in a particular time frame. Should CNRI, GTE, and BSS contribute Materials that result in a Party's contribution for Materials to exceed budgeted amounts, the Parties can agree that such contributing Party shall have its required cash contribution reduced accordingly. Such reduction shall, except as otherwise agreed by the Parties, in no way affect the cash contribution required of any other Party.

- 6.3 UNC and MCNC shall separately submit to its respective funding Parties complete monthly invoices showing a cost breakdown by major cost category, providing sufficient information to document the amount of effort performed. UNC acknowledges that all expenses and costs submitted for reimbursement shall be allowable costs in accordance with OMB Circular A-21, (as applicable) and the Federally approved employee benefit rates and indirect cost rates. The Grant General Conditions (Attachment 1) must be followed by UNC for purposes including, but not limited to, the expenditure and reporting of all funds.
- 7.0 Payment.
- 7.1 CNRI, GTE and BSS shall make the reimbursement to UNC and MCNC within forty-five days upon presentation of satisfactory documentation of costs and expenses. Optionally, UNC and MCNC may elect to provide such documentation in electronic form in a standard format designated by CNRI, in which case payment will be made more expeditiously; except that the last reimbursement may not be paid as expeditiously due to final accounting adjustments at the end of this Agreement.
- 7.2 UNC invoices shall be sent to CNRI which shall promptly provide GTE and BSS with a copy of each invoice. MCNC invoices shall be sent to GTE and BSS with a copy to CNRI. CNRI, GTE, and BSS shall each be responsible for making their respective reimbursements directly to UNC and MCNC, according to the budgets and invoice submissions of UNC and MCNC. CNRI, GTE and BSS reserve the right not to pay any invoices for allowable costs should expenses, costs or other items submitted not be in accordance with Section 6.3.
- 7.3 All payments by CNRI to UNC under this Agreement shall be subject to limitation of funds made available to CNRI by the National Science Foundation under CNRI's cooperative agreement NCR-8919038 with NSF. CNRI agrees to reimburse only those expenses which are allowable pursuant to this Agreement and the Grant General Conditions. Expenditures for foreign travel are not authorized. In the event of

Representative. They shall initiate activities under the guidelines described in *Grant Policy Manual* Section 622. appropriate to the situation.

15. Continuing Grants

a. Unless otherwise specified, each successive increment of a continuing grant will be funded at the level indicated in the original grant letter without a formal request from the grantee, provided the required annual progress report from the PI(s) has been received and contingent on (1) availability of funds; (2) satisfactory scientific/technical progress; and (3) any special conditions of the grant.

b. In order to obtain a committed funding increment and ensure continuity of funding, the required progress report (see Article 16) must be forwarded to the cognizant NSF Program Office at least 3 months prior to the end of the current budget period. If the progress report is not submitted, processing of the planned funding increment will not be initiated by the Foundation.

16. Progress Reports

a. **Content of Progress Reports.** Unless otherwise specified in the grant, progress reports shall include:

(1) a summary of overall progress, including results obtained to date, and a comparison of actual accomplishments with proposed goals for the period;

(2) an indication of any current problems or favorable or unusual developments;

(3) a summary of work to be performed during the succeeding budget period; and

(4) other information pertinent to the type of project being supported or as specified in the terms and conditions of the grant.

b. For all grants (standard or continuing) involving human subjects (see *Grant Policy Manual* Section 711) or nonhuman animals (see *Grant Policy Manual* Section 715), an updated annual certification is required by the Foundation as an appendix to the report.

b. **Timing of Progress Reports.** Unless otherwise specified in the grant, two copies of progress reports shall be submitted to the cognizant NSF Program Office according to the following schedule:

For grants with an award duration of 2 years or more, the first report should be submitted no later than 90 days after the anniversary of the effective date of the grant, with succeeding reports annually thereafter, except after the final year. If a request for renewal support is submitted during the final year, the progress report should be attached to such request. Otherwise, only a final project report need be submitted.

17. Final Report Requirements

Unless otherwise specified in the grant, within 90 days following the expiration of the grant the grantee must:

a. send one copy of the Final Project Report (NSF Form 98A (1-87)) to the cognizant NSF Program Office, along with any technical information items listed in Part III of the Form 98A, as appropriate;

b. furnish the NSF Division of Financial Management with final disbursement information on the Federal Cash Transactions Report, SF 272; and

c. provide any unique reports or other end products in accord with the grant, including report requirements set forth in any NSF brochure, guide, solicitation, etc., referenced in the grant as being directly related to either the award or administration of this grant.

18. Information Collection

Information collection activities performed under this grant are the responsibility of the grantee, and NSF support of the project does not constitute NSF approval of the survey design, questionnaire content, or

information collection procedures. The grantee shall not represent to respondents that information is being collected for or in association with the National Science Foundation or any other Government agency without the specific written approval of such information collection plan or device by the Foundation. However, this requirement is not intended to preclude receipt of NSF support of the project in response to an inquiry or acknowledgment of such support in any publication of this information.

19. Dissemination of Project Results

a. The grantee is expected to publish or otherwise make publicly available the results of the work conducted under the grant. Privileged or confidential information should be released only in a form that protects the rights of privacy of the individuals involved.

b. When any subject writing (as defined in Article 20) is published or distributed, the grantee will send two copies, clearly labeled with the grant number and other appropriate identifying information, to the cognizant NSF Program Office.

20. Copyrightable Material

a. **Subject writing** means any material that:

(1) is or may be copyrightable under Title 17 of the United States Code; and

(2) is produced by the grantee or its employees in the performance of work under this grant.

Subject writings include such items as reports, books, journal articles, software, databases, sound recordings, video tapes, and video discs.

b. **Copyright Ownership, Government License.** Except as otherwise specified in the grant or by this paragraph, the grantee may own or permit others to own copyright in all subject writings. The grantee agrees that if it or anyone else does own copyright in a subject writing, the Federal government will have a nonexclusive, nontransferable, irrevocable, royalty-free license to exercise or have exercised for or on behalf of the United States throughout the world all the exclusive rights provided by copyright. Such license, however, will not include the right to sell copies or phonorecords of the copyrighted works to the public.

c. **Grants Affected by International Agreements.** If the award indicates it is subject to an identified international agreement or treaty, the Foundation can direct the grantee to convey to any foreign participant or otherwise dispose of such rights to subject writings as are required to comply with that agreement or treaty.

d. **Grantee Action to Protect Government Interests.** The grantee agrees to acquire, through written agreement or an employment relationship, the ability to comply with the requirements of the preceding paragraphs and, in particular, to acquire the ability to convey rights in a subject writing to a foreign participant if directed by the Foundation under the previous paragraph. The grantee further agrees that any transfer of copyright or any other rights to a subject writing, by it or anyone whom it has allowed to own such rights, will be made subject to the requirements of this article.

21. Project Income

a. **Definition.** Project income refers to that portion of gross revenues, including royalties, received by or accruing to the grantee through activities undertaken under this grant, whether received during or after the grant period. It includes, but is not limited to, proceeds from the sale, licensing, lease, rental, or other arrangement for the use, release, dissemination, or other disposal of copyrightable or noncopyrightable materials, properties, and inventions developed or produced under the grant. Income also includes any interest earned on all such revenues and proceeds.

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Southern Bell Tel. & Tel. Co.
FPSC Docket No. 920260-TL
Audit
Date: 08/16/93
Item No. 1-124
Page 1 of 1

Request: Provide the contract that BSTI has with UNC for the Mica Trial.

Response: Attached is a copy of the contract between UNC and BST for MICA.

This material constitutes proprietary confidential business information and is being produced subject to a "Notice of Intent to Request Confidential Classification."

Date Provided: August 31, 1993

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AGREEMENT NO. PR-6816-J

BETWEEN

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

AND

BELLSOUTH TELECOMMUNICATIONS, INC.

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THIS IS AN AGREEMENT (hereinafter referred to as the "Agreement") made by and between BELLSOUTH TELECOMMUNICATIONS, INC., a Georgia corporation, (hereinafter referred to as "BST"), and University of North Carolina at Chapel Hill, a North Carolina corporation (hereinafter referred to as "UNC").

1. SCOPE - This Agreement sets forth the terms and conditions pursuant to which UNC and BST may agree to participate in joint research projects, which shall be further described in individual Project Letters described in Section 4 below.
2. EFFECTIVE DATE - The effective date of this Agreement shall be November 19, 1990. This Agreement shall continue in effect until terminated by either party upon at least thirty (30) days prior written notice to the other party, pursuant to the sections herein entitled "TERMINATION FOR CONVENIENCE" or "DEFAULT."
3. DEFINITIONS
 - (a) "Hardware" shall mean the products described in Project Letters, either standard or prototype, used to perform the Project.
 - (b) "Project" shall mean a joint research project described in an applicable Project Letter issued in accordance with this Agreement. Each Project shall have a separate Project Letter mutually agreed to by the parties.
 - (c) "Project Letter" shall mean the separate document to be issued pursuant to this Agreement for each Project which shall be executed by the parties and which shall describe in detail the rights, obligations, and mutual agreement of the parties in connection with the Project. At a minimum, each Project Letter shall contain the elements of information set forth in Section 4(c) of this Agreement.
 - (d) "Software" shall mean the Software described in Project Letters, either standard or prototype, and is defined to mean a set of logical instructions and associated data which guide the functioning of a processor; such instructions and data may be contained in any medium whatsoever, including Hardware

containing a pattern of bits representing such instructions or data ("firmware"), but the term does not mean or include such medium. Unless otherwise set forth in the relevant Project Letter, Software does not include source code versions.

4. PROJECT LETTERS

- (a) This Agreement contemplates the future execution by BST and UNC of one or more written Project Letters. Each Project Letter shall be executed by both parties and shall contain at a minimum the information specified in this Agreement. All transactions between BST and UNC during the term of this Agreement shall be covered by this Agreement and any applicable Project Letter unless the parties agree otherwise in writing.
- (b) Each properly executed Project Letter shall be deemed, upon its execution, to be incorporated into this Agreement. If the Project Letter conflicts with the terms and conditions of this Agreement, the terms and conditions of the Project Letter shall control.
- (c) Project Letters, at a minimum, shall specify the information outlined below:
 - (c)1 A reference to this Agreement.
 - (c)2 The effective date of the Project Letter and term of the Project.
 - (c)3 A detailed description of the Scope of Work for joint research services to be performed, including a description of any Software and/or Hardware that may be delivered pursuant thereto.
 - (c)4 A statement defining all deliverables and their associated due dates.
 - (c)5 UNC contact name (hereinafter the "UNC Contact"), address and telephone number. For the purpose of project administration and not notices.

- (c)6 BST contact name (hereinafter the "BST Contact"), address and telephone number. For the purpose of project administration and not notices.
- (c)7 An enumeration of any items of expense authorized for the Project, as well as the basis and responsibility for such reimbursement, if applicable.
- (c)8 The maximum total expenditure authorized by the Project, which is understood to mean (i) a dollar amount or time limit beyond which UNC or BST may not invoice for joint research Hardware, Software and services under a specific Project Letter, and (ii) a dollar amount or time limit beyond which UNC or BST is not required to expend effort or provide joint research services under a specific Project Letter without prior written agreement to a revised amount.
- (c)9 A statement defining the commencement and completion dates for work to be performed.
- (c)10 Invoicing instructions, if applicable.
- (c)11 A unique identifying serial number assigned by BST's contract administrator.
- (c)12 Signatures of representatives authorized by BST and UNC to execute the Project Letter.
- (c)13 In the event of termination of any Project Letter issued hereunder, a statement describing rights and obligations of the parties with respect to such termination (i.e., liability for Hardware and Software already delivered and work already performed).
- (c)14 A detailed statement of intellectual property rights and obligations of the parties relating to ownership and development, licensing and/or sublicensing of jointly created intellectual property as well as the Software and Hardware that may be delivered pursuant to the Project.

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(c)15 A detailed statement of each party's rights and obligations with respect to all confidential and proprietary information.

5. MANAGEMENT COMMITTEE - UNC and BST will establish a management committee (hereinafter referred to as "Committee") comprised of UNC and BST employees to coordinate the various Projects in accordance with the terms and conditions of this Agreement and the applicable Project Letters. The process by which this joint Committee will operate will be defined in the respective Project Letters.
6. NON-EXCLUSIVE RIGHTS - Nothing contained in this Agreement shall be construed to prevent either party from conducting similar Projects with any other parties, either concurrently with, or subsequent to, the completion of the Project provided for in each Project Letter.
7. FUTURE PRODUCT OR SOFTWARE DEVELOPMENT - Nothing contained in this Agreement shall be construed to require either party to participate in any particular Projects of any type in the future or to develop, manufacture, sell or otherwise make available, any particular Software, Hardware, or services to the other.
8. LICENSES - Except as otherwise provided in this Agreement, no licenses under any patents, copyrights, trademarks, trade secrets or any other intellectual property, express or implied, are granted hereunder by either party to the other.
9. TERMINATION FOR CONVENIENCE - Either party may, at any time for its own convenience, terminate this Agreement or any Project Letter, in whole or in part, upon at least thirty (30) days advance written notice to the other party. The rights and obligations of the parties with respect to termination of any Project Letter shall be as set forth in the relevant Project Letter.
10. TITLE AND RISK OF LOSS

(a) BST Property and Facilities

Title to all property and facilities owned by BST and made available to UNC during the term of this Agreement shall remain in BST. UNC shall use such

property or facilities only in performing under this Agreement. To the extent permitted by the North Carolina Tort Claims Act, UNC shall assume all risk of loss or damage to BST's property or facilities while the same are in UNC's possession or control except to the extent that any damage or loss is caused by or attributable solely to BST.

(b) UNC Property and Facilities

Title to all property and facilities owned by UNC and made available to BST during the term of this Agreement shall remain in UNC. BST shall use such property or facilities only in performing under this Agreement. BST shall assume all risk of loss or damage to UNC's property and facilities while the same are in BST's possession or control except to the extent that any damage or loss is caused by or attributable solely to UNC.

(c) Notice of Loss or Damage

With respect to any loss or damage, each party shall promptly notify the other of any claim and shall cooperate with the other in every reasonable way to facilitate the settlement of any such claim.

11. WARRANTIES DISCLAIMED - Unless otherwise set forth in the relevant Project Letter, BST acknowledges that all Software and Hardware, including all prototypes thereof, disclosed or furnished by UNC to BST hereunder are experimental in nature, are not field grade or field testable and are furnished for evaluation purposes only. Moreover, none of the foregoing have normal operations, administration and maintenance capabilities and UNC does not warrant that the functions of any Software or Hardware will meet BST's requirements or that the completion of any Project or portions thereof will satisfy BST's requirements in any way whatsoever.

ACCORDINGLY, UNC MAKES NO EXPRESS WARRANTIES; AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

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12. LIMITATION OF LIABILITY - NEITHER UNC NOR BST SHALL IN ANY EVENT BE LIABLE TO THE OTHER OR TO THE OTHER'S CUSTOMERS OR TO ANY OTHER PERSON OR COMPANY FOR LOSS OF REVENUES, LOSS OF PROFITS, LOSS OF TIME, INCONVENIENCE, LOSS OF USE OF ANY PROPERTY OR FOR ANY OTHER INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE ARISING OUT OF THIS AGREEMENT OR ANY OBLIGATION RESULTING THEREFROM, WHETHER IN AN ACTION FOR OR ARISING OUT OF ALLEGED BREACH OF WARRANTY, ALLEGED BREACH OF CONTRACT, DELAY, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE. THIS SECTION SHALL SURVIVE FAILURE OF AN EXCLUSIVE REMEDY.
13. UNC INDEMNITY - To the extent permissible by law, UNC agrees to indemnify, defend and save BST harmless from any liabilities, lawsuits, penalties, claims or demands that may be made by any third party for injuries, including death, to persons or damage to property, including theft, resulting from the UNC's negligent or willful acts or omissions or those of persons furnished by UNC, or its agents arising during the course of performing under this Agreement. BST agrees to notify UNC promptly of any written claims or demands against UNC for which the other party is responsible hereunder. UNC agrees to be responsible for the negligence of its employees in accordance with the North Carolina Tort Claims Act.
14. BST INDEMNITY - BST agrees to indemnify, defend and save UNC harmless from any liabilities, lawsuits, penalties, claims or demands that may be made by any third party for injuries, including death, to persons or damage to property, including theft, resulting from BST's negligent or willful acts or omissions or those of persons furnished by BST, its agents, or subcontractors arising during the course of performing under this Agreement. UNC agrees to notify BST promptly of any written claims or demands against UNC for which BST is responsible hereunder.
15. SOFTWARE WARRANTY FOR INFRINGEMENT - Unless otherwise noted in writing, UNC represents that it has the right to deliver the Software to BST and to convey the rights in such Software as set forth in this Agreement and that the use, transfer, license, or sale of such Software does not infringe any patent, trademark, copyright, trade secret or other proprietary interest of any third party.

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16. INDEPENDENT CONTRACTOR - All work performed by either party in connection with this Agreement shall be performed as an independent contractor and not as the agent or employee of the other party. All persons furnished by UNC shall be deemed for all purposes solely UNC employees or agents and shall not be deemed to be employees of BST for any purpose whatsoever. All persons furnished by BST shall be deemed for all purposes solely BST's employees or agents and shall not be deemed to be employees of UNC for any purpose whatsoever. Each party shall furnish, employ, and have exclusive control of its employees performing under this Agreement and shall prescribe and control the means and methods of performing by providing adequate and proper supervision. Each party shall also be solely responsible for compliance with all rules, laws, and regulations relating to employment of labor, hours of labor, working conditions, payment of wages, and payment of taxes, such as employment, Social Security, and other payroll taxes, including applicable contributions from such persons when required by law.
17. RIGHT OF ACCESS - Each party shall normally permit access to the other's respective facilities in connection with parties' performance of their respective obligations and rights hereunder and, at no charge, shall provide those facilities, information and authorizations reasonably necessary for performance hereunder. It is agreed that prior notification will be given when access is required.
18. COMPLIANCE WITH LAWS - In performing under this Agreement, both UNC and BST shall comply with the provisions of all applicable federal, state, county and local laws, ordinances, regulations and codes including, but not limited to, the Export Administration Act of 1979, any subsequent Executive Orders, and implementing regulations therefor, obligations as an employer with regard to health, safety and payment of its employees and identification and procurement of permits, certificates, approvals and inspections required to be provided by either party in performing under this Agreement. Furthermore, this Agreement shall be performed in accordance with all legal requirements, including without limitation, the requirements of the Modification of Final Judgment entered in United States v. Western Electric Co., 552 F. Supp. 131 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983).

19. PUBLICITY - To the extent not inconsistent with the relevant Project Letter, the parties agree to submit to each other all advertising, sales promotions, press releases, and other publicity matters relating to this Agreement wherein corporate or trade names, logos, trademarks or servicemarks (collectively referred to as "Marks") of the other or its affiliated companies are mentioned or language from which the connection of said Marks therewith may be inferred or implied. The parties further agree not to publish or use such advertising, sales promotions, press releases, or publicity matters without the other party's prior written approval. UNC may include BST's name in its routine and internal summary reports on sponsored research.
20. RELEASES VOID - Neither party shall require waivers or releases of any personal rights from representatives of the other in connection with visits to the party's premises. Neither party shall require any employee of the other party to sign a personal "nondisclosure agreement," however, nothing contained herein shall prohibit either party from requesting the other's employee to execute nondisclosure agreements on behalf of their employer. No such releases or waivers shall be pleaded by the parties in any action or proceeding.
21. CONFLICT OF INTEREST - UNC acknowledges that it has received BST's "Position Statement," as contained in either of forms RF-5140 or RF-5037. UNC further stipulates that no officer or employee of BST has been employed, retained, induced, or directed by UNC to solicit or secure this Agreement with BST upon agreement, offer, understanding, or implication involving any form of remuneration whatsoever. UNC agrees, in the event of an allegation of substance (the determination of which will be solely made by BST) that there has been a violation hereof, UNC will cooperate in every reasonable manner with BST in establishing whether the allegation is true. Notwithstanding any provisions of this Agreement to the contrary, if a violation of this provision is found to have occurred and is deemed material by BST, BST may cancel this Agreement.
22. NONDISCRIMINATION COMPLIANCE - UNC agrees to comply with the applicable provisions of the "NONDISCRIMINATION COMPLIANCE AGREEMENT" set forth in Appendix A.

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23. FACILITY RULES - UNC's employees and representatives and those of BST shall, while on the premises of the other, comply with all internal rules and regulations, including where required by Government Regulations, submission of satisfactory clearance from the U. S. Department of Defense and other federal authorities concerned.
24. NON-WAIVER - No waiver or failure to exercise any option, right or privilege under the terms of this Agreement on any occasion or occasions shall be construed to be a waiver of the same or any other option, right, or privilege on any other occasion.
25. SEVERABILITY - If any section, or part thereof, in this Agreement or any relevant Project Letter shall be held to be invalid or unenforceable in any jurisdiction in which this Agreement or Project Letter is being performed, then the meaning of such section or part shall be construed so as to render it enforceable, to the extent feasible; and if no feasible interpretation would save such section or part, it shall be severed from this Agreement or the relevant Project Letter and the remainder shall remain in full force and effect. However, in the event such section or part is considered an essential element of this Agreement or the relevant Project Letter, the parties shall promptly negotiate a replacement therefor.
26. CONTINGENCY - Neither party shall be held responsible for any delay for failure in performance of any part of this Agreement to the extent that such delay or failure is caused by fire, flood, war, strike, embargo, government requirement, civil or military authority, act of God, or other similar causes beyond UNC's or BST's control (hereinafter "Condition(s)"). If any such Condition(s) occurs for a period of thirty (30) days, the party delayed or unable to perform shall give immediate notice to the other party, and the party affected by the other's delay or inability to perform may elect to: (1) terminate this Agreement or part thereof; or (2) suspend this Agreement for the duration of the Condition(s); or (3) resume performance of this Agreement once the Condition(s) ceases with an option in the affected party to extend the period of this Agreement up to the length of time the Condition(s) endured. Unless written notice is given within forty-five (45) days after the affected party is notified of the Condition(s), (2) shall be deemed selected.

27. **DEFAULT** - In the event either party shall be in breach or default of any of the material terms, conditions, or covenants of this Agreement or any Project Letter, and such breach or default shall continue for a period or thirty (30) days after the giving of written notice thereof by the nondefaulting party, then in addition to all other rights and remedies of law or equity or otherwise, except as otherwise limited in this Agreement or any relevant Project Letter, the nondefaulting party shall have the right to cancel this Agreement or the relevant Project Letter without any charge, obligation, or liability whatsoever.
28. **SURVIVAL OF OBLIGATIONS** - Any respective obligations of either party hereunder which by their nature would continue beyond the termination, cancellation or expiration of this Agreement shall survive such termination, cancellation or expiration.
29. **ASSIGNMENT** - Except as provided herein, any assignment or delegation by BST or UNC of the work to be performed, in whole or in part, or of any other interest, right or obligation hereunder without the other's written consent shall be void.
30. **CHOICE OF LAW** - The validity, construction, interpretation, and performance of this Agreement shall be governed by and construed in accordance with the domestic laws of the State of North Carolina.
31. **NOTICES** - Any notices or demands required by law or under the terms of this Agreement shall be given or made by the parties in writing and shall be given by hand delivery, telegram or similar communication, or by certified or registered mail, and addressed to the respective parties set forth below. Such notices shall be deemed to have been given in the case of telegrams or similar communications when sent, and in the case of certified or registered mail when deposited in the United States mail with postage prepaid.

To BST: BellSouth Telecommunications, Inc.
Intellectual Property Consultant
38P40 Southern Bell Center
675 W. Peachtree St., N.E.
Atlanta, Georgia 30375

To UNC: University of North Carolina at Chapel Hill
Mr. Bob Thompson - School of Medicine
144 Mac Nider Hall
Chapel Hill, NC 27599-7575

All notices of a legal nature shall be sent to the parties indicated below:

To BST: BellSouth Telecommunications, Inc.
Legal Department
4300 Southern Bell Center
675 W. Peachtree Street, N.E.
Atlanta, Georgia 30375
Attn: General Attorney - Contracts

To UNC: Ms. Patricia Crawford - Associate Counsel
University of North Carolina at Chapel Hill
CB # 1000, 300 South Building
Chapel Hill, NC 27599-1000

32. ENTIRE AGREEMENT - The terms and conditions of this Agreement together with those in executed Project Letters constitute the entire agreement between BST and UNC with respect to the subject matter hereof and supersedes all prior oral or written understandings between the parties regarding same and may not be modified or amended other than by written instrument executed by authorized representatives of both parties. Notwithstanding the foregoing, it is understood that the terms and conditions of certain agreements, contracts and written understandings executed by all parties pursuant to the Modification of Final Judgment, as well as any judicial orders entered pursuant thereto, may supersede or modify the provisions hereof in certain respects.

In the event of a conflict between the terms and conditions contained in this Agreement and those contained in a Project Letter issued pursuant to this Agreement, the terms and conditions contained in the Project Letter shall prevail.

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IN WITNESS WHEREOF, the parties have executed this Agreement by their duly authorized representatives in one or more counterparts, each of which shall constitute an original, on the dates set forth below.

UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL

BELLSOUTH TELECOMMUNICATIONS, INC.

By: *Wayne R. Jones*
(Authorized Signature)

By: *S. J. Coleman*
(Authorized Signature)

By: Wayne R. Jones
(Print or Type)

By: S. J. Coleman
(Print or Type)

Title: Vice Chancellor, Business
and Finance

Title: Manager

Date: 4/1/93

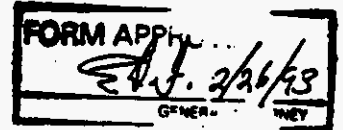
Date: 3/5/93

AGREED AND ACCEPTED:

B. G. Thompson

B. G. Thompson
Principal Investigator

Date: 3/30/93



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NonDiscrimination Compliance Agreement

Contractors shall comply with the applicable provisions of the following:

Exec. Order No. 12138, P.L. 95-507, Exec. Order No. 11246, Exec. Order No. 11625, Section 8 of the Small Business Act as amended, Railroad Revitalization and Regulatory Reform Act of 1976, Exec. Order No. 11701, Exec. Order No. 11758, Exec. Order No. 12138, Section 503 of the Rehabilitation Act of 1973 as amended by PL93-516, Vietnam Era Veteran's Readjustment Assistance Act of 1974 and the rules, regulations and relevant Orders of the Secretary of Labor pertaining to the Executive Orders and Statutes listed above.

For contracts of or which aggregate to \$2,500 or more annually, the following table describes the clauses which are included in the contract:

1. Inclusion of the Equal Employment clause in all contracts and orders;
2. Certification of non-segregated facilities;
3. Certification that an affirmative action program has been developed and is being filed;
4. Certification that an annual Employers Information Report (EEO-1 Standard Form 100) is being filed;
5. Inclusion of the "Utilization of Minority and Women's Business Enterprises" clause in all contracts and orders;
6. Inclusion of the "Minority and Women's Business Enterprise Subcontracting Program" clause in all contracts and orders;
7. Inclusion of the "Listing of Employment Openings" clause in all contracts and orders;
8. Inclusion of the "Employment of the Handicapped" clause in all contracts and orders;

Contract Value	Clause(s) Required
\$ 2,500 to \$10,000	8
\$10,000 to \$50,000	1, 2, 5, 6, 7, 8
\$50,000 or more	1, 2, 3*, 4*, 5, 6, 7, 8

* Applies only for businesses with 50 or more employees

1. Equal Employment Opportunity Provisions

In accordance with Exec. Order No. 11246, dated September 24, 1965 and Part 60-1 of Title 41 of the codes of Federal Regulations (Public Contracts and Property Management, Office of Federal Contract Compliance, Obligations of Contractors and Subcontractors), as may be amended from time to time, the parties incorporate herein by this reference the regulations and contract clauses required by those provisions to be made a part of Government contracts and subcontracts.

2. Certification of Non-segregated Facilities

The contractor certifies that it does not and will not maintain any facilities it provides for its employees in a segregated manner, or permit its employees to perform their services at any location under its control where segregated facilities are maintained and that it will obtain a similar certification prior to the award of any nonexempt subcontract.

3. Certification of Affirmative Action Program

The contractor affirms that it has developed and is maintaining an affirmative action plan as required by Part 60-2 of Title 41 of the Code of Federal Regulations.

4. Certification of Filing of Employers Information Reports

The contractor agrees to file annually, on or before the 31st day of March, complete and accurate reports on Standard Form 100 (EEO-1) or such forms as may be promulgated in its place.

5. Utilization of Minority and Women's Business Enterprises

(a) It is the policy of the Government and BellSouth Corporation and its affiliates as a Government contractor, that minority and women's business enterprises shall have the maximum practicable opportunity to participate in the performance of contracts.

(b) The contractor agrees to use his or her best efforts to carry out this policy in the award of his or her subcontracts to the fullest extent consistent with the efficient performance of this contract. As used in this contract, the term "minority or women's business enterprise" means a business with at least 51 percent of which is owned by minority or women group members or in case of publicly owned businesses, at least 51 percent of the stock of which is owned by minority or women group members. For purposes of this definition, minority group members are Blacks, Hispanics, Asians, Pacific Islanders, American Indians and Alaskan Natives. Contractors may rely on written representation by subcontractors regarding their status as minority or women's business enterprises in lieu of an independent investigation.

6. Minority and Women's Business Enterprise Subcontracting Program

(a) The contractor agrees to establish and conduct a program which will enable minority and women's business enterprises (as defined in paragraph 5 above) to be considered fairly as subcontractors and suppliers under the contract. In this connection, the Contractor shall:

- (1) Designate a liaison officer who will administer the contractor's minority and women's business enterprises program;
- (2) Provide adequate and timely consideration of the potentialities of known minority and women's business enterprises in all "make-or-buy" decisions;
- (3) Assure that known minority and women's business enterprises will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of minority and women's business enterprises;
- (4) Maintain records showing (i) procedures which have been adopted to comply with the policies set forth in this clause, including the establishment of a source list of minority and women's business enterprises, (ii) awards to minority and women's business enterprises on the source list, and (iii) specific efforts to identify and award contracts to minority and women's business enterprises;
- (5) Include the Utilization of Minority and Women's Business Enterprises clause in subcontracts which offer substantial minority and women's business enterprises subcontracting opportunities;
- (6) Cooperate with the Government's Contracting Officer for BellSouth Corporation or its affiliates in any studies and surveys of the contractor's minority and women's business enterprises procedures and practices that the Government's Contracting Officer may from time to time conduct;
- (7) Submit periodic reports of subcontracting to known minority and women's business enterprises with respect to the records referred to in subparagraph (4) above, in such form and manner and at such time (not more often than quarterly) as the Government's Contracting Officer for BellSouth Corporation or its affiliates may prescribe.

(b) The contractor further agrees to insert, in any subcontract hereunder which may exceed \$500,000 (or in the case of WBE \$1,000,000 in the case of contracts for the construction of any public facility and which offer substantial subcontracting possibilities) provisions which shall conform substantially to the language of this Agreement, including this paragraph (b) and to notify the Contracting Officer of the names of such subcontractors.

7. List of Employment Openings for Veterans

In accordance with Exec. Order 11701, dated January 24, 1973, and Part 60-250 of Title 41 of the Code of Federal Regulations, as it may be amended from time to time, the parties incorporate herein by this reference the regulations and contract clauses required by those provisions to be made a part of Government contracts and subcontracts.

8. Employment of the Handicapped

In accordance with Exec. Order 11758, dated January 15, 1974, and Part 60-741 of Title 41 of the Code of Federal Regulations, as it may be amended from time to time, the parties incorporate herein by this reference the regulations and contract clauses required by those provisions to be made a part of Government contracts and subcontracts.

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**BellSouth Telecommunications, Inc.
Policy On Dealing With
Contractors And Suppliers**

Position Statement

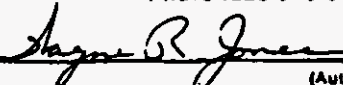
BellSouth Telecommunications, Inc. and its affiliated companies (hereinafter "BellSouth") do business with many contractors and suppliers. It is a fundamental policy of BellSouth that such dealings shall be conducted on a fair and non-discriminatory basis, free from improper influences, so all participating contractors and suppliers may be considered on the basis of the quality and overall cost of their product or service.

BellSouth's policy is to seek out and obtain technically suitable products and services at the lowest overall cost. Accordingly, BellSouth will not recognize any oral agreement; any conversations with BellSouth's employees or representatives shall not be construed to imply a commitment or obligation on behalf of BellSouth. Any information disclosed or made known to BellSouth shall be deemed as public and nonproprietary. Information shall not be received in confidence, unless a prior written agreement authorizing such exchange of information has been executed by an authorized representative of BellSouth. *

BellSouth is committed to doing business with contractors and suppliers in an atmosphere in keeping with the highest standards of business ethics. Therefore, it is BellSouth's policy that our employees shall not accept from customers; from suppliers of property, goods, or services; or from other persons, any gifts, benefits, or unusual hospitality that may in any way tend to influence or have the appearance of influencing them in the performance of their jobs.

Those employees of BellSouth authorized to make purchases or negotiate contracts are aware of this policy, and your cooperation is solicited in order to forestall any embarrassing situations.

I have read and acknowledge the foregoing:

By 
(Authorized Signature)

Name Wayne R. Jones
(Type or Print)


Title vice Chancellor, Business and Finance

Corporate Affiliation University of North Carolina at Chapel Hill

Date 4/1/93

* Except as provided in Agreement No. PR-6816-J between BellSouth Telecommunications, Inc. and University of North Carolina at Chapel Hill.

AGREED AND ACCEPTED:


B. G. Thompson
Principal Investigator

Date: 3/30/93

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**MEDICAL INFORMATION AND COMMUNICATIONS APPLICATION (MICA)
PROJECT LETTER**

This Project Letter is issued pursuant to and shall incorporate the terms and conditions of Agreement No. PR-6816-J ("Agreement") between BellSouth Telecommunications, Inc. (hereinafter "BST") and University of North Carolina at Chapel Hill (hereinafter "UNC").

1. DEFINITIONS

For the purposes of this Project Letter, the following definitions shall apply in addition to certain terms as defined in the Agreement:

- (a) "Human Interaction" shall mean the exchange of both spoken and visual information.
- (b) "Project" shall mean the joint research project called Medical Information and Communications Application (MICA) undertaken by BST and UNC in accordance with the provisions of this Project Letter.
- (c) "Project Team" shall mean the set of personnel assigned by BST and UNC to conduct the Project activities and attain the Project objectives.

2. SCOPE OF PROJECT

The purpose of this Project is to develop demonstrations of medical applications which utilize Broadband-ISDN (hereinafter B-ISDN). This Project will study and test concepts to allow effective Human Interaction in an environment where the individuals are in separate physical locations. The communications systems required for Human Interaction must provide sufficient utility in a number of mediums including voice, still images and video. Specific deliverables to be completed by each party are outlined in Attachment A.

3. TERM OF PROJECT

The Project shall commence on November 19, 1990, and shall continue in effect through December 31, 1993, unless sooner terminated in writing by the parties or extended as hereafter provided. Although the parties will make reasonable efforts to meet the defined milestone dates described in Attachment A, dates may be extended with the approval of the Project Managers.

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4. FINANCIAL OBLIGATIONS

- (a) The Disbursement Schedule, outlined in Attachment A, sets forth the schedule of payment to be made by BST to UNC and the due date. All payments shall be due on the last day of the specified months in said Attachment and may be invoiced by UNC thirty (30) days in advance of such due dates.
- (b) The amounts payable by BST pursuant to the disbursement Schedule do not include any federal, state or local sales, use, excise, or other taxes or any like fees or charges which may be assessed against and payable by UNC in connection with this Project Letter of the performance hereof. BST shall pay to UNC within thirty (30) days of the date of UNC's invoice herefore, all such taxes, fees or charges.

5. UNC CONTACT

Bob Thompson-UNC Project Manager
University of North Carolina, School of Medicine
Biomedical Engineering Department
Room 144 MacNider Hall
Chapel Hill, NC 27599-7575

6. BST CONTACT

(Science and Technology)

Bill Bruwer-BST Project Manager
42L70 Southern Bell Center
675 W. Peachtree St., N. E.
Atlanta, Ga. 30375
404-420-8521

7. INVENTIONS

- (a) The parties agree that if any inventions, discoveries or improvements are conceived, first reduced to practice, made or developed in the course of and in anticipation of, work performed under this Project Letter, by either party or by one or more of their employees, consultants, representatives or agents (hereinafter "Associates"), the parties agree that such inventions shall be jointly owned by the parties, that

each party shall have an equal undivided one-half interest in and to such inventions, discoveries and improvements as well as in and to any patent applications or patents that may be granted thereon in any country of the world (hereinafter "Inventions").

- (b) The parties further agree that they will and will have their Associates sign all papers and do all acts which may be necessary, desirable or convenient to enable either party to file and prosecute applications for such Inventions, and to maintain patents granted thereon. Each party shall promptly disclose to each other all information obtained from joint development that results in any inventions made jointly during the term of the Project Letter and in the course of work performed hereunder. The filing party shall also provide the other party with copies of official correspondence to and from the U.S. Patent office within thirty (30) days of delivery or receipt of such correspondence.
- (g) If the use, sale or manufacture of said inventions requires the use of inventions previously made by parties or not originated or developed hereunder, the parties grant and agree to grant to each other an unrestricted, royalty-free license to make, use, sell and have made said inventions but only to the extent necessary to use, sell, make or have made said Inventions. The license so granted to the parties includes the right to grant an unrestricted, royalty-free license to any subsidiary, directly or indirectly, owned by BellSouth Corporation or UNC but only to the extent necessary to use, sell, make or have made said Inventions.

8. DEVELOPED INFORMATION

- (a) The parties agree to disclose and furnish promptly to the other party any and all technical information, computer or other apparatus programs, specifications, drawings, records, documentation, works of authorship or other creative works, ideas, knowledge or data, written oral or otherwise expressed, originated or developed as a result of work performed under this Project Letter ("Developed Information").

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- (b) The parties further agree that all such Developed Information shall be the joint property of both parties performing under this Project Letter and may not be used for other purposes except upon such terms as may be agreed upon between either party in writing.
- (c) To the extent such Developed information is copyrightable, a copyright registration may be filed, upon written notice to the other party, by either party in the joint name of both parties. The non-filing party shall cooperate in every reasonable way, at its own expense, with the filing party to obtain such registration. Both parties shall have the right individually to grant nonexclusive licenses with respect to such copyrighted Developed Information, each party hereby consenting to the grant of such licenses by the other party. Each party shall retain all royalties that it receives for such license, without accounting for such royalties to the other party.
- (d) If such Developed Information includes materials previously developed or copyrighted by the other party and not originated or developed hereunder, each party grants and agrees to grant to the other party an unrestricted, royalty-free license to use, distribute and copy such materials. The license so granted includes the right to grant an unrestricted, royalty-free license to any subsidiary, directly or indirectly, owned by either BellSouth Corporation or UNC.

9. PROPRIETARY INFORMATION

(a) Definition of Proprietary Information

- 1.1 Any specifications, drawings, sketches, models, samples, tools, computer or other apparatus programs, technical or business information or data that is disclosed by one of the parties to the other in writing which is marked as proprietary, confidential or the like at the time of such disclosure (all hereinafter designated "Proprietary Information") and is furnished to the other party under this Project Letter shall remain the property of the disclosing party.

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(b) Protection of Proprietary Information

- 1.1 Each party hereby agrees to receive such Proprietary Information of the other and to disclose such Proprietary Information subject to the following terms and conditions:
- 1.2 Each party agrees to protect such Proprietary Information of the other party, provided to the other party from whatever source (specifically including but not limited to Bell Communications Research, Inc.) from distribution, disclosure or dissemination to anyone except employees of the receiving party with a need to know such Proprietary Information in conjunction with the provisions of this Project Letter, except as authorized herein or as otherwise authorized in writing by the disclosing party. Each party will use the same standard of care to protect such Proprietary Information of the other as it uses to protect its own similar confidential and proprietary information.
- 1.3 All such Proprietary Information shall be in writing or other tangible form and clearly marked with a confidential or proprietary legend. Proprietary Information conveyed orally shall be designated as proprietary or confidential at the time of such oral conveyance and shall be reduced to writing within forty-five (45) days.
- 1.4 Neither party will have an obligation to protect any of the Proprietary Information which:
 - (a) is made publicly available by the disclosing party or lawfully obtained by the receiving party from any source other than the disclosing party;
 - (b) is lawfully obtained by the receiving party from any source other than the disclosing party;
 - (c) is previously known to the receiving party without an obligation to keep it confidential; or
 - (d) is released by the disclosing party in writing.
 - (e) is independently developed by personnel not associated with this Agreement.

- 1.5 Neither party will make copies of the Proprietary Information received by it from the other party other than is necessary for its use under the terms hereof, and each such copy will be marked with the same proprietary notices as appear on the originals.
- 1.6 UNC agrees to use BST's Proprietary Information solely in supporting this BST project and for no other customer or purpose.
- 1.7 The parties agree not to identify each other or any other owner of Proprietary Information disclosed hereunder in any advertising or publicity without the prior written permission of the other.
- 1.8 BST reserves the right to disclose Information to Bell Communications Research, Inc. upon receiving written agreement by Bell Communications Research, Inc. to be bound by the same standard of confidentiality with regard to such Proprietary Information as is set forth herein.
- 1.9 No license under any trademark, patent or copyright is granted or implied by the disclosure of any Proprietary Information hereunder.

10. MATERIAL FURNISHED BY BST

All BST'S provided specifications, drawings, sketches, schematics, models, samples, tools, software (including Vortech software), computer programs, technical or business information or data, written, oral, or otherwise (all hereinafter designated "BST Material") obtained by UNC hereunder or in contemplation hereof shall remain BST's property. UNC agrees not to copy BST software (including Vortech software). All copies of such BST's Material in written, graphic, or other tangible form shall be returned to BST upon request or at the termination of this Project Letter.

11. TERMINATION FOR CONVENIENCE

Either party may elect to terminate the Project for its own convenience and without any liability (except as provided herein) upon thirty (30) days prior written notice to the other party. Upon such termination both parties shall receive immediately the most current version of Material and Market Research being used for this Project prior to the effective termination date. BST shall not be liable for further payments to UNC according to the Disbursement Schedule in Attachment A, after the effective termination date.

12. INCORPORATION OF ATTACHMENT

Attachment A, referred to in this Project Letter and attached hereto, is an integral part of this Project Letter and is incorporated herein by this reference.

13. ENTIRE AGREEMENT

This Project Letter and the Agreement constitute the entire agreement between the parties with respect to the subject matter contained herein, superseding all previous agreements pertaining to such subject matter, and may be modified only by an amendment executed in writing by both parties hereto.

IN WITNESS WHEREOF, the parties have executed this Agreement by their duly authorized representatives in one or more counterparts, each of which shall constitute an original, on the dates set forth below.

UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL

BELLSOUTH TELECOMMUNICATIONS, INC.

By: Wayne R. Jones
(Authorized Signature)
Wayne R. Jones

By: S. J. Coleman
(Authorized Signature)

By: _____
(Print or Type)

By: S. J. Coleman
(Print or Type)

Title: Vice Chancellor, Business
and Finance

Title: Manager

Date: 4/1/93

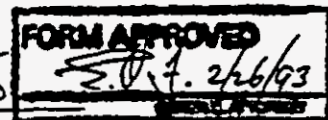
Date: 3/5/93

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AGREED AND ACCEPTED:

B. G. Thompson
B. G. Thompson
Co-Principal Investigators
2/27/93

John D. Charlton
J. D. Charlton



918516 N100101

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ATTACHMENT A

PROJECT DELIVERABLES AND FUNDING

UNC DELIVERABLES

1. Provide necessary conduit for the placement of fiber optic cables to room 444 in MacNider Hall, room 2047 in the Main Hospital, and room 185 in the Family Medicine Center. The conduit for MacNider will be provided by May 15, 1992, and the remainder will be provided by June 15, 1992.
2. Provide space for the equipment and remote consultation sites to be available by June 15, 1992.
3. Provide personnel support to give demonstrations of the application an average of twice a month at times and locations mutually agreeable to BST and UNC.
4. Make available for demonstration MICA FilmPlanes software.
5. Provide adaptation and/or integration of the Vortech developed communications software with the FilmPlanes software so that FilmPlanes operates with Fujitsu supplied Terminal Adapters over the B-ISDN network.
6. Provide Project Coordination of UNC activities.
7. Provide experienced written critique of the service from the medical community at UNC.
8. Provide advice and suggestions regarding other health care support services that may be possible candidates for B-ISDN.

ATTACHMENT A

PROJECT DELIVERABLES AND FUNDING

BST DELIVERABLES

1. Provide fiber facilities to user sites via the conduit routes provided by UNC (see UNC deliverables, above).
2. Provide (via arrangements with Fujitsu Agreement No. PR-6111-J) network switching equipment and terminal adapters
3. Provide communications software developed by Vortech Data, Inc. as provided for herein.

FUNDING

BST will pay seventy two thousand dollars (\$72,000) to UNC for hardware, salary, and miscellaneous expenses. These monies will be payable upon receipt of invoice from UNC.

Southern Bell Tel. & Tel. Co.
FPSC Docket No. 920260-TL
Audit
Date: 08/16/93
Item No. 1-125
Page 1 of 1

Request: Provide the white paper prepared on ATN as discussed in our 8/10/93 interview with Dan Spears.

Response: Attached is a copy of the white paper prepared on ATM by Dan Spears.

This material constitutes proprietary confidential business information and is being produced subject to a "Notice of Intent to Request Confidential Classification."

Date Provided: August 31, 1993

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E-145

ATM

Item 1-125
Attachment

PAGES 209-213 ARE
Proprietary in its ENTIRETY

PRIVATE/PROPRIETARY

CONTAINS PRIVATE AND/OR PROPRIETARY INFORMATION.
MAY NOT BE USED OR DISCLOSED OUTSIDE THE BELL SOUTH COMPANIES
EXCEPT PURSUANT TO A WRITTEN AGREEMENT.

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insufficient funds from NSF to cover this Agreement, CNRI shall notify all Parties by facsimile or other written means within five working days of such event.

- 7.4 Approval for UNC purchases of computers, Software and other capital Hardware exceeding \$5,000.00 must be obtained from authorized CNRI persons prior to purchase. UNC shall recognize e-mail from authorized persons at CNRI as a valid instrument to enable proceeding with the purchasing process. Authorized CNRI persons include Dr. Robert Kahn and any other CNRI person he may designate in writing or by e-mail to UNC. UNC shall also adhere to the requirements of its Organizational Prior Approval System, as developed for and approved by NSF, prior to the acquisition under this Agreement of computer hardware and Software and any capital equipment expenditure.
- 7.5 All expenditures shall be consistent with the attached Project Description, as amended, and budget for the relevant performance period. UNC shall make all expenditures in accordance with the special and general award conditions, except as specifically requested by UNC and approved, in writing, by CNRI.
- 7.6 In the event the anticipated level of support cannot be awarded because of federal budgetary constraints, the Parties will negotiate a change in the level of effort of the Agreement. If such change cannot be agreed upon, the Project will be terminated in accordance with Section 5.0.
- 8.0 Warranties.
- 8.1 UNC and MCNC individually represent and warrant to CNRI, GTE and BSS that it shall use its best efforts and shall assign the required personnel to conduct the work contemplated by the Parties herein and as outlined in Attachment 2 hereto.
- 8.2 UNC represents and warrants to CNRI, GTE and BSS that this work will be carried out under the overall direction of Vernon Chi, Henry Fuchs, and Julian Rosenman. MCNC represents and warrants to CNRI, GTE, and BSS that this work will be carried out under the overall direction of Dan Stevenson. No substitution of personnel to direct this work shall be undertaken without the express permission, in writing, of CNRI, GTE, and BSS.
- 8.3 The Parties agree that research conducted during the course of the Project and/or in the performance of this Agreement will not be used to provide treatment of any patient. UNC and MCNC regard the prototype network as a research tool only, and warrant and represent that they will not use the network on a clinical basis and, in particular that UNC and

MCNC will not use the facilities furnished pursuant to this Agreement to treat any patients. Such facilities and the network shall only be used to evaluate prior medical treatment of such patients. For purposes of this Agreement, reference to UNC and MCNC shall be deemed to include any of their agents, employees or contractors.

9.0 Limitation of Liability.

9.1 Subject the provisions of Section 9.2 below, CNRI, GTE and BSS's liability to UNC and MCNC under this Agreement for whatever reason shall be limited to the actual consideration to be paid by CNRI, GTE, and BSS pursuant to the terms and conditions in Section 6.0 of this Agreement, and shall specifically not include any incidental, contingent, general, indirect, special, or consequential damages whatsoever even if advised of the possibility thereof.

9.2 GTE and BSS hereby individually agree to indemnify, defend and hold UNC and MCNC, their employees and/or agents harmless from and against any loss, claim, damage or liability of any kind arising out of or in connection with the respective use by GTE and/or BSS of the results of the Project, provided, however, that: no Party shall have any obligation to defend, indemnify, and hold harmless any other Party from and against any loss, claim, damage or liability arising out of or related to any actual or purported activity of such other Party, to the extent that such activity constitutes direct or willful misuse, direct or willful misappropriation or direct or willful infringement of any intellectual property right of any Person not a Party to this Agreement.

10.0 Reports, Publications and Meetings.

10.1 Any Party shall inform all other Parties in a timely manner of any significant problems or events that could affect the overall schedule or progress of the Project. Such problems or events shall be discussed at Project Council meetings or otherwise among the Parties.

10.2 Each Party shall cooperate and participate in developing and updating the Project Description by providing prior to March 1, 1991, March 1, 1992, and at other times may reasonably be required by CNRI, updated descriptions of:

- a. Project objectives, milestones and timetables
- b. Research and Facilities Plans
- c. Management and Coordination structures, if any
- d. Annual budget

- 10.3 The Project Coordinator shall compile the foregoing information and distribute it to each Party. Each Party shall individually prepare a quarterly status report on work performed during each immediately past quarter during the term of this effort. These reports shall show the status of all major events and summaries of major work proposed or carried out during the quarter including technical status, accomplishments, problems, issues, changes in future plans and any pending requests for approval. The reports shall also include a summary of all expenditures for that quarter. These reports shall be submitted within fourteen days after the reporting period ends. These reports are intended to be a short informal summary and shall be delivered electronically to the following Internet Address "Gigabits@nri.reston.va.us" using ASCII or a document format or formats to be mutually agreed upon by the Parties. This mailbox will be accessible only to CNRI and the cognizant program officers at NSF and DARPA. CNRI will compile the technical accomplishments described in these reports for dissemination to all Parties to this Agreement, other testbeds, and to the government.
- 10.4 Financial reports shall be submitted by UNC and MCNC individually within forty-five days of the end of each quarter and shall provide the same level and detail as in the original budget submission.
- 10.5 Each Party shall cooperate in preparing an annual report suitable for public release for the Project which describes:
- . Significant technical & educational accomplishments, including new knowledge gained
 - . A list of published papers, if any
 - . Explanations of any significant deviations from the previous plan
 - . Patents, copyrights, and other intellectual property rights if any
 - . Technology transfer activities
 - . Management coordination or planning structures established
 - . Other funding and contributions to the Project

The Project Coordinator shall compile the foregoing information. The annual report should cover the work for the previous calendar year and is due and shall be provided on or before April 1, 1991 and annually thereafter during the period of this award. A preliminary report for calendar year 1992 shall be provided on or before January 15, 1993. The first two items should be contained in the basic report and the remaining five items in a separate memorandum or detachable annex to the report.

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11.0 Publicity and Advertising.

11.1 Any press releases, planned interviews with the media, or other planned public announcements with respect to this Agreement or the transactions contemplated hereby and where a Party's name is mentioned or used in any way, shall be made only at such time and such manner as an authorized representative of each Party shall have mutually approved in advance in writing. Such consent shall not be unreasonably withheld. Provided however, that nothing in this Agreement shall prevent any Affiliate of any Party from making any public announcement which such Person in good faith considers to be necessary in order to satisfy the requirements of any applicable law, rule, or regulation of any government agency or stock exchange. Further this section does not apply where information about the Project is presented orally or in written form at or in connection with a scientific meeting, convention, symposium, technical trade or scientific publication or the like provided, however, that: no Party, regardless whether such Party by virtue of this Agreement shall possess a right to or license under any Invention or joint Invention of any other Party, shall knowingly disclose, orally or in writing, or sell or license, or offer to sell or license, such Invention or Joint Invention without prior written notice to such other Party and without securing any necessary permissions.

11.2 No Party shall employ or use the name and/or marks of another Party in any promotional materials, advertising, or the like without the prior express written permission of that Party except that such Party(ies) may, during the term of this Agreement, identify by name the Parties to this Agreement.

12.0 Ownership of Inventions.

12.1 The provisions in this Agreement concerning Inventions made in whole or in part by UNC or employees, agents, and contractors thereof, are subject and subordinate to the provisions in Article 751.3, Standard Patent Rights Clause, (Attachment 4), and the Grant General Conditions (Attachment 1), to the extent such inventions are covered thereunder as a Subject Invention.

12.2 An Invention made solely or jointly by any employee(s) of a Party shall be assigned to that Party according to the policies and procedures of that Party.

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- 12.3 Joint Inventions made by employee(s) of two or more different Parties shall be assigned jointly, and without accounting, to the employer(s) of the inventors.
- 12.4 Each Party shall provide prompt written notice to every other Party of any Invention or Joint Invention first conceived or reduced to practice during the term and within the scope of this Agreement.
- 12.5 In the event any Party elects not to obtain, prosecute, and/or maintain patents on Inventions in which it possesses any ownership interest, it shall so notify the other Parties in writing. Any other Party shall then have the right to obtain, prosecute, and/or maintain the patents under terms and conditions agreed to between the Party owning the Invention and the other Party. To the extent that such other Party at its expense obtains, prosecutes, and/or maintains patents or patent applications on such Invention(s), that Party shall have the right to license third parties thereunder. After recovery of patent application prosecution and maintenance fees and expenses, that Party may license the patent on such Inventions to third parties and share any royalties equally with the Party whose employee made the Invention. The Party whose employee made the Invention may also license the patent on such Invention to third parties, but is not required to share royalties with the Party which did elect to obtain, prosecute and maintain patent on such Invention.
- 12.6 In the event that a Party possessing an ownership interest in a Joint Invention elects not to share equally in the expenses in seeking or maintaining patent protection for such Joint Invention in any country with the other owning Part(ies), the other Part(ies) shall have the right to seek or maintain such protection at its own expense in such country and shall have full control over the prosecution and maintenance thereof. If those other Part(ies) desire to abandon any prosecution or maintenance of a patent or application thereof, any other Party may, at its own expense or jointly with other Parties, seek or maintain such patent or application thereof.
- 12.7 For each Joint Invention, each Party shall give the other Party all reasonable assistance in obtaining patent protection and in preparing and prosecuting any patent application filed by the other Party, and shall cause to be executed assignments and all other instruments and documents as may be necessary or appropriate to carry out the intent of this Section 12.

12.8 In performing its obligations under this Agreement, each Party agrees to take all reasonable steps to avoid designing or developing any item that infringes upon any patent of any third party. If any Party becomes aware of any patent which raises a question of infringement during the course of this Agreement, it agrees to notify the other Parties promptly, and, in that event, the Party agrees to take reasonable steps to pursue a design which does not present a question of infringement.

13.0 Licensing of Inventions.

13.1 Regarding any Invention owned by, in whole or in part, any Party under the provisions of this Agreement, that Party hereby grants to every other Party an irrevocable, nonexclusive, royalty-free, worldwide license to practice such Invention and to make, have made, use, lease, sell, and/or otherwise transfer products or services for their own use, in providing such products or services, incorporating such Invention of the other Parties to this Agreement as of the date such Invention was reduced to practice. The Party owning the Invention shall have the right to license any third party, without an accounting to any other Party.

13.2 Licenses granted herein shall include the right of a Party to sublicense its Affiliates; provided, however, that such Affiliate shall have no right to grant licenses or sublicenses to any third party.

13.3 Notwithstanding the provisions of Section 29.1, all licenses granted to a Party under this Agreement shall not be assignable or transferable except (i) where the Party transfers its entire business, or (ii) where the Party assigns the license to an Affiliate.

13.4 Nothing contained in the Agreement shall be deemed to grant either directly or by implication, estoppel, or otherwise, any license to a Party under any patents or patent applications arising out of any other Inventions of any other Party or those of its Affiliates.

14.0 Licensing of Software.

14.1 Any Party, to the extent it has the right to do so, hereby grants to the other Parties a nonexclusive, royalty-free, worldwide license to use, reproduce and distribute, for Internal Use and External Use, any Software authored in connection with the Project and during the term of this Agreement, including the right to make Derivative Works

thereof. Any licensed Party shall reproduce the same notice on any copy or Derivative Works of such Software as is originally affixed by the licensing Party.

- 14.2 Subject to the confidentiality provisions herein and a Party's intellectual property rights, each Party shall have the right to use, for any purpose and during this Agreement and thereafter, any and all know-how, ideas, concepts and/or techniques contained in the Software developed by any other Party in connection with this Project during the term of this Agreement.
- 14.3 Licenses granted herein shall include the right of a Party to sublicense its Affiliates; provided, however, that such Affiliate shall have no right to grant licenses or sublicenses to any third party.

15.0 Licensing of Mask Works.

- 15.1 Any Party, to the extent it has the right to do so, hereby grants to the other Parties a nonexclusive, royalty-free, worldwide license to reproduce or have reproduced in semiconductor chips the three dimensional pattern or topography of any Mask Work that is fixed in a semiconductor chip in connection with this Project whether for Internal Use or External Use.
- 15.2 Licenses granted herein shall include the right of a Party to sublicense its Affiliates; provided, however, that such Affiliate shall have no right to grant licenses or sublicenses to any third party.

16.0 Background License.

- 16.1 Each Party grants to every other Party for the term of this Agreement a fully paid, nonexclusive, royalty-free, background license under all intellectual property rights that such granting Party now owns or now possesses and with respect to which such granting Party has an unqualified right to grant such license, but only to the extent that such rights are reasonably necessary for the development of the Project.
- 16.2 The Parties agree that the licenses granted in this Section 16.0 shall include the right to grant sublicenses, of the same scope as the licenses granted in Section 16.1, to third parties and to Affiliates directly involved in the Project. The Parties further agree that any license or sublicense granted hereunder is expressly limited in scope and duration, and that such license or sublicense shall terminate upon

expiration or termination of this Agreement, or as otherwise provided by this Agreement, whichever occurs earliest.

- 16.3 In addition, GTE and its affiliates expect, during the course of the Project and/or the term of the Research Agreement, to continue to make developments in the area of broadband transport technology. For the purposes of this Agreement, broadband transport technology shall mean any technology used in the transmission, switching or communication of information, at any time developed or otherwise acquired by GTE, other than from a Party under this Agreement, and provided, operated, controlled, or deployed by GTE in the performance and during the term of the Research Agreement. For the purposes of this Agreement, broadband transport technology shall include all improvements, additions, enhancements or other modifications to the above-described technology as well as all technology for providing an interface to such technology, to the extent that such technology is made or developed by GTE or an affiliate of GTE or is acquired by GTE, other than from a Party under this Agreement. In particular, broadband transport technology shall include the broadband fast circuit switch to be deployed in central office or other facilities of GTE in the performance of the Project.

Notwithstanding any other provision of this Agreement, GTE shall retain sole and exclusive right, title and interest in and to such broadband transport technology. Such broadband transport technology shall not be deemed to have been conceived, reduced to practice, created or authored in the performance of or in connection with the Project, notwithstanding any reference to such broadband transport technology in the Project Description and notwithstanding the definition set forth in Section 1.15. No other party shall obtain any right, license (except as provided in Section 16.1) or interest in or to broadband transport technology developed or otherwise acquired by GTE, other than from a Party under this Agreement, or acquired by an affiliate of GTE, regardless whether such technology might otherwise be considered or comprise an Invention, Software, Mask Work, Technical Data or Work Products under other provisions of this Agreement.

17.0 Transfer of Work Products.

- 17.1 Any Work Products considered by any Party to be Confidential Information shall be identified by a legend such as "[Party] Confidential." Such Work Products shall be disclosed within a reasonable period of time following development to the other Parties in this Agreement and to the federal government through CNRI.

- 17.2 Subject to patent, copyright and Mask Work rights, any Party shall have the right to use Technical Data of another Party, provided, however, that for a period of two years following receipt of any information identified as Confidential Information of a Party, the other Parties will use the same care and discretion to avoid disclosure, publication or dissemination of such information outside of its employees and employees of its Affiliates as it would employ with similar information of its own which it does not desire to disclose, publish or disseminate. The restriction of confidentiality of this Section shall be subject to the exceptions to confidentiality listed in Section 19.0 below.
- 17.3 A Party may use for any purpose, subject to Section 19.0, the residuals (i.e., know-how, ideas, concepts and/or techniques) disclosed in Confidential Information of another Party and retained by the first Party's employees with access to such information.
- 18.0 CNRI and Federal Government Rights in Work Products.
- 18.1 Notwithstanding the provisions of Sections 29.1 of this Agreement, UNC and MCNC individually agree to grant, and hereby grant, to CNRI a nonexclusive, irrevocable, royalty-free, worldwide right and license to use, reproduce, distribute, perform, and display any Work Products made, created or developed by UNC and/or MCNC pursuant to this Agreement for research and educational purposes, but not for commercial purposes, in any other testbeds in connection with CNRI's Cooperative Agreement with NSF or any logical follow-on agreements with the federal government, including the right to prepare Derivative Works thereof.
- 18.2 Licenses herein granted to CNRI by UNC and MCNC shall include the right of CNRI to sublicense any third party participating in any other testbed under CNRI's Cooperative Agreement with NSF or any logical follow-on agreements with the federal government, to the extent that such third party agrees to grant, and does grant, to CNRI the right to sublicense UNC and/or MCNC to use, reproduce, distribute, perform and display in the Project any work products made, created or developed by such third party in connection with CNRI's Cooperative Agreement with NSF, including the right to prepare Derivative Works thereof; provided, however, that any such sublicenses are made expressly contingent upon the written commitment of such third party to be bound by the obligations of confidentiality with respect to the Work Products of the same scope as set forth in this Agreement.

18.3 Nothing in this Agreement shall limit the rights of the federal government as set forth in Articles 20 and 23 of the Grant General Conditions.

18.4 To the extent any Party is granted a license in Work Products developed under this Agreement, the federal government is granted the same rights to the extent permitted for any Party to this Agreement; provided however, the federal government must agree to the provisions of Section 19.0, Disclosure of Confidential Information, prior to disclosure by any Party.

19.0 Disclosure of Confidential Information.

19.1 Each Party agrees not to disclose for a period of two years after the termination of this Agreement, without the prior written consent of the disclosing Party, any Confidential Information introduced pursuant to this Project which is exclusively owned by another Party. This obligation shall cease earlier at such time as the disclosing Party discloses such Confidential Information to any third Party without requiring such third Party to maintain such information in confidence. Notwithstanding any other provision of this Section 20.1 or elsewhere in this Agreement, each Party agrees that any Confidential Information on GTE's broadband transport technology disclosed by GTE or by an Affiliate of GTE to any other Party shall not be disclosed by such Party during the term of this Agreement and for an indefinite period thereafter, subject to the provisions of Section 19.3, without the prior written approval of GTE.

19.2 In order to be treated as Confidential Information hereunder, information of a disclosing Party which is in writing or other tangible form shall be clearly marked with a "[Party]" confidential, proprietary or the like legend and information of the disclosing Party which is conveyed orally shall be designated as proprietary, confidential or the like at the time of such oral conveyance and must be summarized in writing to the receiving Party within forty-five days after the initial oral conveyance.

19.3 No Party as the recipient of Confidential Information of another Party hereunder shall have any obligation to protect any such Confidential Information or shall be restricted with respect to its use of such information which:

- (a) is made publicly available by the disclosing Party or lawfully by a non-party to this Agreement;
- (b) is lawfully obtained by the receiving Party from any source other than the disclosing Party;

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- (c) is already in the possession or previously known to the receiving Party without any obligation to keep it confidential;
- (d) is released by the disclosing Party from the restrictions of this Agreement by written notice to the receiving Party;
- (e) is independently developed by the receiving Party as evidenced by its records; or
- (f) is required under law to be disclosed by the receiving Party, provided, however, that, in the event of a proposed disclosure by the receiving Party pursuant to this paragraph, the receiving Party shall give the disclosing Party the maximum possible prior notice of the legal requirement for disclosure.

19.4 No Party shall make copies of any Confidential Information received by it hereunder from another Party other than to the extent necessary for the receiving Party's use of such Confidential Information pursuant to the terms of this Agreement. Each such permitted copy will be marked by the copying Party with the same proprietary notices as appeared on the original.

19.5 No license under any trademark, patent or copyright is granted or implied by the disclosure of any Confidential Information hereunder.

19.6 Notwithstanding any other provisions of Sections 19.1 through 19.5 above and except as otherwise prohibited by law, court order or judicial decree, any Party may manufacture, have manufactured, market, sell, lease or otherwise furnish any products and/or services based on the Project's results, without compensating the other Parties in any manner whatsoever, notwithstanding common ownership of any of the Project's results.

20.0 Other Businesses and Activities.

20.1 Except as provided in this Agreement nothing contained in this Agreement shall be deemed to restrict in any way the freedom of any Party, acting directly or through one or more of its Affiliates, to conduct as it sees fit any business or activity whatsoever, without any accountability or responsibility to any other Party.

21.0 Taxes.

21.1 All taxes based upon the gross or net income of UNC or MCNC and any other taxes, fees, business licenses or permits of any kind which are required by and/or assessed by any domestic or foreign governmental authority in connection with UNC's or MCNC's performance under this Agreement, shall be

solely the responsibility of and paid by UNC or VCNC respectively.

21.2 All taxes based upon the gross or net income of CNRI, and any other taxes, fees, business licenses or permits of any kind which are required by and/or assessed by any domestic or foreign governmental authority in connection with CNRI's Cooperative Agreement with NSF, shall be solely the responsibility of and paid by CNRI.

21.3 All taxes based upon the gross or net income of GTE and BSS, and any other taxes, fees, business licenses or permits of any kind which are required by and/or assessed by any domestic or foreign governmental authority in connection with GTE and BSS performance under this Agreement shall be solely the responsibility of and paid by GTE and BSS, respectively and individually.

22.0 Disclaimer of Agency.

22.1 This Agreement shall not constitute any Party the legal representative or agent of another Party, nor shall any Party have the right or authority to assume, create, or incur any liability or obligation of any kind, expressed nor implied, against, or in the name of, or in the behalf of another Party. No Party shall have any power or authority to bind or commit any other Party. Nothing contained in the Agreement shall be deemed or construed as creating a joint venture or partnership between the Parties. Except as specifically set forth herein, no Party shall have the power to control the activities and operations of any other Party and their status is, and at all times will continue to be, that of independent contractors.

22.2 Each Party's relationship to any other Party in the performance of this Agreement is that of an independent contractor. Personnel furnished by a Party (hereinafter "Party's Employee(s)") to perform services hereunder shall at all times remain under that Party's control and direction and shall be employees solely of that Party. That Party shall pay all wages, salaries and other amounts due their employees relative to this Agreement, shall be responsible for all obligations respecting them relating to FICA, income tax withholdings, unemployment compensation and other similar responsibilities. In the event that Party's independent status is denied or changed and that Party's Employee(s) is declared to be "common law" employees with respect to work performed for another Party, to the extent permitted by law, the employing Party agrees to hold harmless from all taxes and costs, including reasonable attorneys' fees, as set forth above, which any other Party may incur as a result of such change in status. Moreover, solely for purposes of complying

with the Immigration Reform and Control Act of 1986 and its regulations ("IRCA"), each Party warrants and agrees to another Party that, to the best of their ability, it will (i) not assign any individual to perform work hereunder who is an unauthorized alien under IRCA, (ii) immediately remove any alien discovered to be unauthorized from such work and replace him/her with one who is not an unauthorized alien, and (iii) to the extent permitted by the law to indemnify and hold any other Party harmless from all liabilities, damages, losses, or expenses and reasonable attorneys' fees arising out of a breach of this clause.

22.3 Each Party warrants and represents that it shall have and maintain, during the performance of this Agreement, sufficient agreements with all employees, contractors, or agents engaged by that Party in performance hereunder, granting that Party rights and licenses sufficient to support all performance and grants of rights and licenses by that Party under this Agreement. Except as to GTE, evidence of such agreements shall be provided to CNRI promptly upon request.

23.0 Publication of Work.

23.1 UNC and MCNC shall acknowledge in any publication that the work undertaken under this Agreement was supported by the National Science Foundation and the Defense Advanced Research Projects Agency (hereinafter referred to as "DARPA") under cooperative agreement NCR 8919038 with the Corporation for National Research Initiatives.

23.2 In any publication mentioning or referring to work undertaken under this Agreement, a Party shall name and give appropriate credit to every other Party to this Agreement, and acknowledges that such other Parties are contributing resources and expertise in the development of the prototype network.

23.3 NSF, DARPA, CNRI, GTE and BSS should be cited in any required disclaimer.

23.4 A copy of any publication shall be provided to all Parties and to DARPA and NSF.

24.0 Integration.

24.1 This Agreement sets forth the entire and exclusive agreement and understanding of the Parties relating to the subject matter contained herein, and merges all prior and contemporaneous discussions and agreements with respect thereto. No Party shall be bound by any definition, condition, warranty or representation except as expressly

stated and set forth in this Agreement or as subsequently set forth in a writing signed by duly authorized representatives of each Party.

25.0 Title and Risk of Loss.

25.1 Unless otherwise specified in this Agreement, or unless otherwise unanimously agreed by the Parties, title to all Materials owned by a Party and furnished to another Party(s) pursuant to this Agreement shall remain in the providing Party. Any Materials owned by a providing Party and in another Party's possession or control shall be used only in the performance of this Agreement, unless otherwise authorized in writing by the providing Party. The Party(s) receiving the Materials shall assume the risk of loss or damage for all Materials furnished to that Party pursuant to this Agreement while in that Party's custody, possession or control, except for any loss or damage due to ordinary wear and tear, and that Party shall not be liable for any loss or damage to the extent arising out of providing Party's negligence or willful misconduct.

26.0 Warranties and Representations.

26.1 Each Party represents and warrants to the other Parties that to the best of its knowledge and belief, (i) it has no conflicts of interest with respect to the tasks to be performed under this Agreement; (ii) it has not previously entered into any contract or agreement, or executed any documents, with any other person, firm, association, corporation, or educational institution that will prevent it from providing to the other Parties the benefit of its services under this Agreement, or from disclosing and assigning Inventions (if any) in accordance with the terms of this Agreement, or from performing any other provision of this Agreement; (iii) it will not enter into any such contract or agreement, or execute any such documents, which would create a conflict of interest or which would prevent it from performing any of the provisions of this Agreement; and (iv) it will not knowingly incorporate confidential or proprietary information of any third party into any Materials or deliverables (including Work Products) furnished under this Agreement without prior written notice to, and express written consent from, such other third party.

26.2 Each Party represents and warrants that (i) to the best knowledge of such Party, no claim has been asserted against such Party prior to the effective date of this Agreement either through a charge of infringement or an offer of license, alleging or suggesting that any activity involved in the design, manufacture, use, sale, lease, or other disposition of the Project or of the Project Results would

constitute direct or contributory infringement of any patent, copyright, or trade secret or would constitute misappropriation of know-how, technical information or any other industrial or intellectual property right of any person or entity not a party of this Agreement, and (ii) such Party has not been requested prior to the effective date of this Agreement to accept a license under any patent, copyright, trade secret, exclusive right in a Mask Work, or any other industrial or intellectual property right of any person or entity not a party to this Agreement in connection with any assertion that such a license would be required in order to render lawful the design, manufacture, use, sale, lease or other disposition of the Project or of the Project Results.

26.3 Each Party represents and warrants that it has full and sufficient right to grant the rights and licenses in Work Products submitted under this Agreement and that, to the best of that Party's knowledge and belief, such Work Products will not infringe upon or violate any rights of others. Before initiating the preparation of any Work Products under this Agreement that is based on or incorporates any preexisting works subject to patents, copyrights or other rights owned by any third party or parties, a Party shall undertake to obtain any required authorizations with respect to such preexisting works. In the event that Party is unable to obtain the required authorizations to support all performance and grants of rights and licenses by that Party under this Agreement, that Party agrees not to use such preexisting works in any Work Products undertaken or submitted pursuant to this Agreement unless specifically authorized in writing by the other Parties.

27.0 Records and Audit.

27.1 UNC and MCNC shall maintain complete, separate and accurate records of all expenses, costs, overheads and employee records made pursuant to this Agreement in accordance with generally accepted accounting practices. These records shall be retained for a period of at least three (3) years from the termination of this Agreement. Following reasonable notice to UNC and/or MCNC, CNRI, GTE and/or BSS or their authorized agents and representatives shall have access to such records at a mutually agreeable time and location for purposes of audit during the period in which records are required to be maintained.

28.0 Derivative Rights.

28.1 Each Party warrants and represents that it has or will have the right, through written agreements with its employees or otherwise, to fulfill the obligations, and to secure for and convey to any other Party the rights, and licenses, called

for in this Agreement. Further, in the event that a Party utilizes any subcontractor, consultant, or other third party to perform any of the tasks contemplated by this Agreement, such Party agrees to enter into such written agreements with such third party and to take such other steps as are or may be required to fulfill the obligations, and to secure for and convey to any other Party the rights and licenses, called for in this Agreement.

29.0 Assignment.

29.1 No Party may assign or otherwise subcontract or transfer any of its rights or obligations under this Agreement, except with the prior written consent of the other Parties, which consent shall not be unreasonably withheld, provided that any Party may assign all or any portion of their respective rights and delegate any of their respective responsibilities to any of their Affiliates without the other Party's consent. Subject to the advance approval of the Project Council, MCNC may subcontract out any work assigned to it under this Agreement, but MCNC shall continue to be ultimately responsible for fulfillment of its obligations of the Project Description and under this Agreement.

30.0 Nondiscrimination Compliance.

30.1 All Parties hereto agree to comply with the applicable provisions of the "NONDISCRIMINATION COMPLIANCE AGREEMENT" set forth in Attachment 5.

31.0 Compliance with Laws.

31.1 Each Party shall comply with the provisions of all applicable federal, state, county and local laws, ordinances, regulations, and codes including, but not limited to, each Party's obligations as an employer with regard to the health, safety and payment of its employees, and identification and procurement of required permits, certificates, approvals, and inspections in performance of this Agreement. Notwithstanding whether a specification is furnished, if Hardware furnished is required to be contracted, packaged, labeled, or registered in a prescribed manner, each Party shall comply with federal law and applicable state or local law. Furthermore, this Agreement shall be performed in accordance with all legal requirements, including without limitation, the requirements of the Modification of Final Judgment entered in United States v. Western Electric Co., 552 F. Supp. 131 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983).

32.0 Severability.

32.1 In the event that any provision of this Agreement is adjudicated to be unlawful, such provision shall be deemed to be severed from this Agreement, but every other provision of this Agreement shall remain in full force and effect.

33.0 Releases Void.

33.1 No Party shall require waivers or releases of any personal intellectual property rights from representatives of another Party as a condition precedent to visits to another Party's respective premises. In connection with this Project, no Party shall require any employee of another Party to sign a personal "nondisclosure agreement."

34.0 Non-Waiver.

34.1 No waiver or failure to exercise any option, right or privilege under the terms of this Agreement on any occasion or occasions shall be construed to be a waiver of the same or any other option, right, or privilege on any other occasion.

35.0 Contingency.

35.1 No Party shall be held responsible for any delay or failure in performance of any part of this Agreement to the extent that such delay or failure is caused by fire, flood, explosion, war, strike, work slow down, embargo, government requirement, civil or military authority, act of God, or other similar causes beyond a Party's control ("Conditions"). If any such Condition occurs, the Party delayed or unable to perform shall give immediate notice to the other Party(s), and the Party affected by the other's delay or inability to perform may elect to: (1) terminate this Agreement or part thereof as to services not already performed, or (2) resume performance of this Agreement once the Condition ceases with an option in the affected Party to extend the period of this Agreement up to the length of time the Condition endured.

36.0 Notice.

36.1 Any and all written notices, communications and deliveries among and between any Party with reference to this Agreement shall be sufficiently made on the date of mailing if sent by registered or certified mail to the respective address of the other Party, subject to change upon written notice, as follows:

In the case of CNRI:

Corporation for National Research Initiatives
1895 Preston White Drive, Suite 100
Reston, VA 22091

Attn: Robert E. Kahn
President

In the case of UNC:

University of North Carolina - Chapel Hill
Office of Research Services
C B # 4100
Bynum Hall
Chapel Hill, NC 27599

Attn: Associate Director - Office of Research Services

In the case for MCNC:

MCNC
P. O. Box 12889
3021 Cornwallis Road
Research Triangle Park, North Carolina 27709-2889
Attn: W. Holt Anderson, Secretary

In the case for GTE:

GTE Service Corporation
Telephone Operations
Williams Square Building
5205 North O'Connor Blvd.
Mail Code W11L08
Irving, TX 75039

Attn: General Counsel - Intellectual Property

In the case for BSS:

BellSouth Services Incorporated
South E9D1 3535 Colonnade Parkway
Birmingham, Alabama 35243
Attn: Vice President and General Counsel

37.0 Disclaimer - Default.

37.1 Except for risk of loss or damage to material, each Party shall indemnify the other Party from and against any direct damages due to personal injury, including death, or damage to

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tangible property, including theft, to the extent arising from the negligence or willful misconduct of the indemnifying Party or its agents, sub-contractors, or employees, in connection with the performance of this Agreement. The Party to be indemnified shall give reasonable notice to the indemnifying Party of any notices, claims, causes of action, suits or proceedings in which liability for such damages is asserted against the Party to be indemnified. The Parties understand that by law the liability of UNC is limited by the North Carolina Tort Claims Act, and UNC explicitly does not waive the defense of sovereign immunity.

37.2 NO PARTY MAKES ANY WARRANTIES, WRITTEN OR ORAL, STATUTORY, EXPRESS OR IMPLIED IN CONNECTION WITH THE PROJECT INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR AGAINST INFRINGEMENT, EXCEPT AS OTHERWISE PROVIDED HEREIN. ALL WORK PRODUCTS FURNISHED BY ANY PARTY IN CONNECTION WITH THE PROJECT ARE FURNISHED AS IS AND WITHOUT ANY SUCH WARRANTIES. IN NO EVENT SHALL ANY PARTY BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR FAILURE TO PERFORM UNDER THIS AGREEMENT.

37.3 If any Party shall at any time be in default in fulfilling any of its obligations under this Agreement and such default shall not be remedied within thirty (30) days after receipt of written notice from the aggrieved Party, the aggrieved Party shall have whatever rights and remedies are available to it by law or equity subject to any limitations on liability contained elsewhere in this Agreement.

38.0 Precedence.

38.1 Except as to the provisions of Sections 6.3 and 12.1, this Agreement will take precedence over the Grant General Conditions in the event of any discrepancies.

39.0 Incorporation by Reference.

39.1 The Attachments referred to in this Agreement and attached hereto (or amended by unanimous written consent of the Parties) are integral parts of this Agreement and are incorporated herein by this reference. These Attachments specifically are 1) Grant General Conditions; 2) the document submitted to CNRI by the other Parties and entitled "VISTAnet: A Very High Bandwidth Prototype Network for Interactive 3D Medical Imaging Research"; 3A) MCNC Contract Proposal Budget; 3B) UNC Contract Proposal Budget; 4) Standard Patent Rights Clause; 5) Nondiscrimination Compliance Agreement; 6) Certification Regarding Lobbying.

40.0 Miscellaneous.

40.1 Governing Law. The law of the State of North Carolina shall govern with respect to this Agreement and any questions which may arise under this Agreement.

40.2 Sections. A reference to a Section in this Agreement shall be deemed to include all related Sections and subsections. By way of example, a reference to Section 5 or 5.0 shall be deemed to include Sections 5.1, 5.2, 5.3, and 5.4.

40.3 UNC agrees to abide by the terms of Attachment 6, Certification Regarding Lobbying.

41.0 Counterparts.

41.1 This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute one Agreement.

BELLSOUTH SERVICES INCORPORATED

Name: D. W. Jones
(Signature)

Name: D. W. Jones
(Printed Name)

Title: Vice President - Network Strategic Planning

Date: August 1, 1990

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Name: Tom K. Scott
(Signature)

Name: Tom K. Scott
(Printed Name)

Title: Director of Research Services

Date: August 1, 1990

CORPORATION FOR NATIONAL RESEARCH INITIATIVES

Name: Robert Kahn
(Signature)

Name: Robert Kahn
(Printed Name)

Title: President

Date: July 31, 1990

MCNC

Name: Matthew Kuhn
(Signature)

Name: Matthew Kuhn
(Printed Name)

Title: President

Date: July 31, 1990

GTE SERVICE CORPORATION

Name: William D. Wilson
(Signature)

Name: William D. Wilson
(Printed Name)

Title: Vice President - Business
Planning

Date: August 1, 1990

AND

Name: Ronald J. Tuccillo
(Signature)

Name: Ronald J. Tuccillo
(Printed Name)

Title: Assistant Secretary

Date: August 2, 1990

40.0 Miscellaneous.

40.1 Governing Law. The law of the State of North Carolina shall govern with respect to this Agreement, and any questions which may arise under this Agreement.

40.2 Sections. A reference to a Section in this Agreement shall be deemed to include all related sections and subsections. By way of example, a reference to Section 5 or 5.0 shall be deemed to include Sections 5.1, 5.2, 5.3, and 5.4.

40.3 UNC agrees to abide by the terms of Attachment 6, Certification Regarding Lobbying.

41.0 Counterparts.

41.1 This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute one Agreement.

BELLSOUTH SERVICES INCORPORATED

Name: *D.W. Jones*
(Signature)

Name: D. W. Jones
(Printed Name)

Title: Vice President - Network Strategic Planning

Date: 8-1-90

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Name: _____
(Signature)

Name: Tom K. Scott
(Printed Name)

Title: Director of Research Services

Date: _____

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40.0 Miscellaneous.

40.1 Governing Law. The law of the State of North Carolina shall govern with respect to this Agreement and any questions which may arise under this Agreement.

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41.0 Counterparts.

41.1 This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute one Agreement.

BELLSOUTH SERVICES INCORPORATED

Name: _____
(Signature)

Name: D. W. Jones
(Printed Name)

Title: Vice President - Network Strategic Planning

Date: _____

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Name: Tom K. Scott
(Signature)

Name: Tom K. Scott
(Printed Name)

Title: Director of Research Services

Date: 6/1/90

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CORPORATION FOR NATIONAL RESEARCH INITIATIVES

Name: [Signature]
(Signature)

Name: Robert Kahn
(Printed Name)

Title: President

Date: 7/31/90

MCNC

Name: _____
(Signature)

Name: Matthew Kuhn
(Printed Name)

Title: President

Date: _____

GTE SERVICE CORPORATION

Name: _____
(Signature)

Name: William D. Wilson
(Printed Name)

Title: Vice President - Business
Planning

Date: _____

AND

Name: _____
(Signature)

Name: Ronald J. Tuccillo
(Printed Name)

Title: Assistant Secretary

Date: _____

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CORPORATION FOR NATIONAL RESEARCH INITIATIVES

Name: _____
(Signature)

Name: Robert Kahn
(Printed Name)

Title: President

Date: _____

MCNC

Name: *[Handwritten Signature]* *WMA*
(Signature)

Name: Matthew Kuhn
(Printed Name)

Title: President

Date: July 31, 1990

GTE SERVICE CORPORATION

Name: _____
(Signature)

Name: William D. Wilson
(Printed Name)

Title: Vice President - Business Planning

Date: _____

AND

Name: _____
(Signature)

Name: Ronald J. Tuccillo
(Printed Name)

Title: Assistant Secretary

Date: _____

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CORPORATION FOR NATIONAL RESEARCH INITIATIVES

Name: _____
(Signature)

Name: Robert Kahn
(Printed Name)

Title: President

Date: _____

MCNC

Name: _____
(Signature)

Name: Matthew Kuhn
(Printed Name)

Title: President

Date: _____

GTE SERVICE CORPORATION

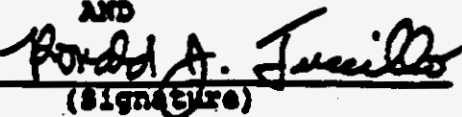
Name: 
(Signature)

Name: William D. Wilson
(Printed Name)

Title: Vice President - Business Planning

Date: 8-1-90

AND


Name: 
(Signature)

Name: Ronald J. Tuccillo
(Printed Name)

Title: Assistant Secretary

Date: 8-2-90

SEARCHED _____ INDEXED _____
SERIALIZED _____ FILED _____
AUG 1990 FBI - [illegible]



GRANT GENERAL CONDITIONS

The following Articles in the Grant General Conditions are deleted:

2, 3, 4, 5, 10, 12, 13, 15, 16(a)(5), 16(b), 17, 18, 19(b), 24, 29, 31, 36, 37.

The following Articles are revised as follows:

- in 8(a) and 25, delete the word "NSF" in the first line in each instance;
- in 14, delete the phrase "both the NSF Program Officer" and add "CNRI" instead.

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4.	No-Cost Extensions	24.	Cost Sharing and Cost Sharing Records
5.	Expenditures for Related Projects	25.	Standards for Financial Management Systems
6.	Consultant Services	26.	Audit and Records
7.	Equipment	27.	Site Visits
8.	Procurement Standards	28.	Suspension or Termination
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10.	Rearrangements and Alterations	30.	Non-discrimination
11.	Allowable Costs	31.	National Security: Classifiable Results Originating Under NSF Grants
12.	Payments	32.	Animal Welfare
13.	Changes in Objectives or Scope	33.	Research Involving Recombinant DNA Molecules
14.	Changes in Principal Investigator or Level of Effort	34.	Clean Air and Water
15.	Continuing Grants	35.	Human Research Subjects
16.	Progress Reports	36.	Activities Abroad
17.	Final Report Requirements	37.	Resolution of Conflicting Conditions
18.	Information Collection	38.	Liability
19.	Dissemination of Project Results	39.	Limitation on Rate of Pay
20.	Copyrightable Material		

Article 1. Grantee Responsibilities and Federal Requirements

a. The grantee has full responsibility for the conduct of the project or activity supported under this award and for adherence to the award conditions. Although the grantee is encouraged to seek the advice and opinion of the Foundation on special problems that may arise, such advice does not diminish the grantee's responsibility for making sound scientific and administrative judgments and should not imply that the responsibility for operating decisions has shifted to the Foundation.

b. The requirements of this award are contained in these Grant General Conditions unless otherwise specified in the grant instrument. Certain applicable Federal administrative standards are incorporated by reference. The applicable requirements are contained in:

(1) OMB Circular A-110, for all grantees except units of State and local government and

(2) 45 CFR 602 (the Common Rule implementing OMB Circular A-102), for units of State and local government.

c. By acceptance of this grant, the grantee agrees to comply with the applicable Federal requirements for grants and cooperative agreements and to the prudent management of all expenditures and actions affecting the grant. Documentation for each expenditure or action affecting this grant must reflect appropriate institutional review or approvals which should be made in advance of the action. Institutional reviews are intended to help ensure that expenditures are allowable, necessary and reasonable for the conduct of the project, and that the proposed action:

- (1) is consistent with grant terms and conditions;
- (2) is consistent with NSF and grantee policies;
- (3) represents effective utilization of resources; and
- (4) does not constitute a change in scope.

Nothing in this article shall be construed to require administrative review or documentation which duplicates those already required by existing institutional systems or by applicable Federal standards (e.g. A-110).

2. Prior Approval Requirements

a. The activities and expenditures below require written prior approval from the NSF Grants Officer:

- (1) Establishing relationships of projects under the direction of collaborating Principal Investigators (see Article 9);
- (2) Contractual arrangements (see Article 6);
- (3) Rearrangements/Alterations \$10,000 or over (see Article 10);
- (4) Changes in objectives/scope (see Article 13); or
- (5) Changes in PI or level of effort (see Article 14).

b. Written prior approval from the cognate NSF Program Officer is necessary to rebudget funds budgeted for participant or trainee support costs (see Grant Policy Manual Section 510).

c. Unless otherwise specified in the grant, provisions of the applicable Federal cost principles and other Federal administrative requirements for prior agency approval apply to this grant only to the extent specified above.

3. Pre-Award Costs

a. Grantees may incur pre-award costs within the ninety-day period immediately preceding the effective date of the grant providing: the approval of pre-award spending is made and documented in accordance with the grantee's procedures prior to the incurrence of the cost; the advanced funding is necessary for the effective and economical conduct of the project; and the costs are otherwise allowable.

b. Pre-award expenditures are made at the grantee's risk. Grantee authority to approve pre-award costs does not impose an obligation on the Foundation prior to the availability of appropriations.

4. No-Cost Extensions

a. Grantees may extend the expiration date of the grant if additional time beyond the established expiration date is required to assure adequate completion of the original scope of work within the FUND already

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made available. A single extension, which shall not exceed six (6) months, may be made for this purpose. Request must be made prior to the originally established expiration date. The grantee shall notify the NSF Grants Officer in writing within ten (10) days of approval of the extension to ensure accuracy of the Foundation's award data.

b. Requests for no-cost extensions beyond the above referenced authority must follow the procedures set forth in *Grants Policy Manual* Section 244.3.

5. Expenditures for Related Projects

a. During the grant period, grant funds may be committed or expended for otherwise allowable costs of related projects under the direction of one Principal Investigator, and charged to this or another NSF grant, provided the grants are scientifically or technically related.

b. Relationships must be established and documented by the grantees on the basis of scientific or technical commonality of the work being supported. All determinations of relationships must be initiated by or agreed to by all affected principal investigators. Examples of scientific or technical commonality include:

(1) the theoretical approaches of projects are interrelated;

(2) studies of the same phenomena are conducted by the same or different techniques; or

(3) specific instrumentation, which is central to the work being performed, is used.

c. The scientific or technical relationship of grants under the direction of two or more collaborating Principal Investigators must be approved in writing by the NSF Grants Officer with the concurrence of the appropriate NSF Program Officer(s).

d. Nothing in this article is intended to require additional determination, documentation, or approvals in cases in which common costs are allocated among two or more grants on the basis of use or benefit in accordance with the applicable Federal cost principles.

e. Notwithstanding the above, no significant change in the objectives or scope of an individual NSF grant may be made unless the Foundation approves such a change in writing in accordance with Article 13.

6. Consultant Services

Payments to individuals for consultant services under this grant shall not exceed the daily equivalent of the then current maximum rate paid to a GS-18 Federal employee (exclusive of indirect cost, travel per diem, clerical services, vacation, fringe benefits, and supplies). As of February 15, 1987, this rate is \$277 per day.

7. Equipment

a. Unless otherwise specified in the grant, title to equipment purchased or fabricated with NSF grant funds by all grantees except small businesses and commercial organizations (as defined in *Grants Policy Manual* Section 340) shall vest in the grantee institution, with the understanding that such equipment (or a suitable replacement obtained as a trade-in) will remain in use for the specific project for which it was obtained.

b. Unless otherwise specified in the grant, title to equipment purchased or fabricated with NSF grant funds by a small business or other commercial firm will vest in the Government. Such equipment will be managed in accordance with *Grants Policy Manual* Section 333.

c. The grantees will assure that each purchase of equipment is:

(1) necessary for the research supported by the grant;

(2) not reasonably available and assemble;

(3) of the type normally charged as a direct cost to sponsored agreements; and

(4) purchased in accordance with institutional practices.

d. Expenditures for general purpose equipment (see *Grants Policy Manual* Section 340(e)) are unallowable unless the equipment is primarily or exclusively used in the actual conduct of scientific research.

e. By acquiring equipment having a unit acquisition cost of \$10,000 or more, the grantee assures the Foundation that the equipment will be subject to reasonable inventory controls and maintenance procedures and, to the extent possible, will be shared for work on other projects.

8. Procurement Standards

a. NSF grantees shall follow the requirements of the applicable Federal standards for procurement contained in:

(1) Attachment O to OMB Circular A-110, for all grantees except State and local governments;

(2) Subpart C, 45 CFR 602, for units of State and local governments.

b. No significant part of the research or substantive effort may be contracted or otherwise transferred without prior approval of the NSF Grants Officer. Approval of such arrangements, which have been previously detailed in the proposal, may be indicated in the grant instrument.

c. Requests for approval shall include an explanation of the need for the contracting, a proposed performance statement, justification for the price or estimated cost (including a detailed budget for cost-reimbursement type arrangements), and a description of the selection process including the extent of competition.

9. Travel

a. Expenses for transportation, lodging, subsistence, and related items incurred by project personnel and by outside consultants employed on the project (*Grants Policy Manual* Section 516.1) who are in travel status on business related to an NSF-supported project are allowable as prescribed in the governing cost principles. The requirements for prior approval detailed in the governing cost principles are waived.

b. Support for the foreign travel of an investigator's dependents is allowable only under the following conditions:

(1) the investigator is a key person whose full-time presence is essential to the research; and

(2) the investigator's residence away from home and in a foreign country for a continuous period of six months or more is essential for the effective performance of the project.

a. Use of U.S.-Flag Air Carriers

(1) The Comptroller General of the United States, by Decision B-138942 of June 17, 1975, as amended March 31, 1981, provided guidelines for implementation of Section 3 of the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 1517).

(2) Any air transportation to, from, between, or within a country other than the United States of persons or property, the expense of which will be assisted by NSF funding, must be performed by a U.S.-flag air carrier if service provided by such a carrier is available.

(3) For the purposes of this requirement, U.S.-flag air carrier service is considered available even though:

(a) comparable or a different kind of service can be provided at less cost by a foreign-flag air carrier;

(b) foreign-flag air carrier service is preferred by, or is more convenient for, the Foundation or traveler; or

(c) service by a foreign-flag air carrier can be paid for in excess foreign currency.

(4) The following rules apply unless their application would result in the first or last leg of travel from or to the United States being performed by a foreign-flag air carrier:

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(a) A U.S.-flag air carrier shall be used to destination or, in the absence of direct or through service, a further interchange point on a usually traveled route.

(b) If a U.S.-flag air carrier does not serve an origin or interchange point, a foreign-flag air carrier shall be used only to the nearest interchange point on a usually traveled route to connect with a U.S. flag air carrier.

(c) If a U.S.-flag air carrier involuntarily reroutes the traveler via a foreign-flag air carrier, the foreign-flag air carrier may be used notwithstanding the availability of alternative U.S.-flag air carrier service.

d. Use of Foreign-Flag Air Carriers.

(1) Travel To and From the United States. Use of a foreign-flag air carrier is permissible if:

(a) the airport abroad is the traveler's origin or destination airport, and use of U.S.-flag air carrier service would extend the time in a travel status by at least 24 hours more than travel by a foreign-flag air carrier; or

(b) the airport abroad is an interchange point, and use of U.S.-flag air carrier service would require the traveler to wait 6 hours or more to make connections at that point, or would extend the time in a travel status by at least 6 hours more than travel by a foreign-flag air carrier.

(2) Travel Between Points Outside the United States. Use of a foreign-flag air carrier is permissible if:

(a) travel by a foreign-flag air carrier would eliminate two or more aircraft changes en route;

(b) travel by a U.S.-flag air carrier would extend the time in a travel status by at least 6 hours more than travel by a foreign-flag air carrier; or

(c) the travel is not part of the trip to or from the United States, and use of a U.S.-flag air carrier would extend the time in a travel status by at least 6 hours more than travel by a foreign-flag air carrier.

(3) Short Distance Travel. For all short distance travel, regardless of origin and destination, use of a foreign-flag air carrier is permissible if the elapsed travel time on a scheduled flight from origin to destination airport by a foreign-flag air carrier is 3 hours or less and service by a U.S.-flag air carrier would double the travel time.

10. Rearrangements and Alterations

a. Rearrangement and alteration costs that do not constitute construction (i.e., rearrangements and alterations aggregating less than \$10,000) to adapt space or utilities within a completed structure to accomplish the objectives of the grant are allowable, provided:

(1) the building has a usable life consistent with project purposes and is architecturally suitable for conversion;

(2) the rearrangements and alterations are essential to the project; and

(3) the space involved will be occupied by the project.

b. In situations in which the space is rented because laboratory facilities or other work areas of a type of coverage not normally available to the grantee are required, the grantee must secure a lease for the length of the project using the space in order for the cost of rearrangements and alterations to be allowable. Rental charges may be made in conformance with the grantee's policies and in the same manner that similar charges are made to any amount, provided that such rental charges are reasonable and otherwise conform to the governing cost principles.

11. Allowable Costs

a. The allowability of costs and cost allocation methods for work performed under this grant, up to the amount specified in the grant, shall

be determined in accordance with the applicable Federal cost principle in effect on the effective date of the grant and the terms of the grant.

b. The Federal cost principles applicable to specific types of grants are as follows:

(1) Institutions of Higher Education. OMB Circular A-21 is applicable to both public and private institutions of higher education and is codified in 41 CFR 1-15.3.

(2) Other Nonprofit Organizations. OMB Circular A-122, except those organizations specifically exempted by the Circular, or DHH: publication, Guide for Hospitals, OASC-3; as appropriate.

(3) Commercial Firms and Certain Nonprofit Organizations. Federal Acquisition Regulation 31.2 (48 CFR 31.2) is applicable to commercial firms and those nonprofits organizations specifically exempted from the provisions of OMB Circular A-122.

(4) State and Local Governments. OMB Circular A-87 is codified in 41 CFR 1-15.7.

c. Prior approval requirements of the above Federal cost principles have been modified by Article 2.

12. Payments

a. Unless otherwise specified in the grant, the grantee shall receive payments under this grant through cash advance by U.S. Treasury check drawn in amounts necessary to meet current needs, pursuant to the procedures contained in Treasury Department Circular No. 1075, revised. If the grantee does not qualify for advance payments by Letter of Credit, advances shall be requested by submission of a Request for Advance or Reimbursement, SF 270 (see Chapter IV of the *Grant Policy Manual*). For new grantees, a copy of SF 270 should have been provided by the Foundation along with a copy of the *Grant Policy Manual*. The grantee will continue with the NSF Division of Financial Management for payment on a regular cycle or as required. The grantee agrees to comply with all applicable Treasury regulations and National Science Foundation implementing and reporting procedures, which are outlined in Chapter IV and Chapter VI of the *Grant Policy Manual*.

b. In accordance with a revision to Attachment I to OMB Circular A-110, affected grantees are required to maintain advances of Federal funds in interest-bearing accounts and submit the interest earned to the Federal agency that provided the funds. Interest earned on advance payments to other than State agencies shall be reported to the Foundation on the Federal Cash Transactions Report, SF 272 (if payments are made in accordance with Paragraph a above) and remitted by check made payable to the National Science Foundation.

13. Changes in Objectives or Scope

Neither the phenomenon or phenomena under study nor the objectives of the project listed in the proposal or agreed modifications thereto shall be changed without prior NSF approval. Such changes should be proposed to the NSF Program Officer by the Principal Investigator in a written communication countersigned by the Authorized Organizational Representative. NSF approval of such changes will be by amendment to the grant signed by the NSF Grants Officer.

14. Changes in Principal Investigator or Level of Effort

If a named Principal Investigator or Project Director plans to or becomes aware that he or she will (1) devote substantially more or less effort to the work than anticipated in the approved proposal, (2) sever his or her connection with the grantee organization, or (3) otherwise relinquish active direction of the project, he or she shall advise both the NSF Program Officer and the grantee's Authorized Organizational

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b. **Standard Treatment.** Unless otherwise specified in the grant, project income received or accruing to the grantee during the period of this grant shall be retained and added to the funds committed to the project by the Foundation and used to further project objectives. The grantee shall have no obligation to the Foundation with respect to copyright or patent royalties or project income received after the period of this grant.

c. **Records Retention.** The grantee is required to retain appropriate financial and other records relating to project income earned during the grant period and for three years beyond the end of the grant period.

22. Acknowledgment of Support and Disclaimer

a. An acknowledgment of NSF support and a disclaimer must appear in any publication of any material, whether copyrighted or not, based on or developed under this project, in the following terms:

"This material is based upon work supported by the National Science Foundation under Grant No. (Grantees should enter NSF grant number). The Government has certain rights in this material."

b. All subject writings (as defined in Article 20), except scientific articles or papers published in scientific, technical or professional journals, must also contain the following disclaimer:

"Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."

23. Patent Rights

Unless otherwise provided in the grant letter, if this grant is for experimental, developmental, or research work, the clause found in the *NSF Grant Policy Manual* (implementing the Bayh-Dole Act, 35 U.S.C. 200 et seq.) applies (see *Grant Policy Manual* Section 751.3.) The grantee will include this clause in all subawards for experimental, developmental, or research activities.

24. Cost Sharing and Cost Sharing Records

a. The grantee must cost share under this grant in accordance with any specific requirements contained in or referenced by the grant. If the grant has no specific requirements and if the work supported by this grant is for research resulting from an unsolicited proposal, the grantee may meet the statutory cost sharing requirement by choosing either of two alternative methods: (1) by cost sharing a minimum of 1 percent on this project; or (2) by cost sharing a minimum of 1 percent on the aggregate total costs of all NSF-supported projects requiring cost sharing. (See *Grant Policy Manual* Section 640 for further guidance.)

b. The grantee must maintain records of all project costs that are claimed by the grantee as cost sharing as well as records of costs to be paid by the Government. Such records are subject to audit. If the grantee's cost participation includes in-kind contributions, the basis for determining the valuation for volunteer services and donated property must be documented.

c. If the grant does not contain or reference any specific cost sharing requirements and provides funds solely for the following purposes (not considered to be in support of "research"), statutory cost sharing is not required (see *Grant Policy Manual* Section 643.1):

- (1) international travel;
- (2) construction, improvement or operation of facilities;
- (3) acquisition of research equipment;
- (4) ship operations;
- (5) education and training;
- (6) publication, distribution and translation of scientific data and information;

~~(7) symposia, conferences and workshops; and
(8) special studies authorized or required by Subsections 3a(5) through 3a(7) of the NSF Act, as amended.~~

25. Standards for Financial Management Systems

NSF grantees, except State or local units of government, shall have financial management systems that meet the requirements of Attachment F to OMB Circular A-110. State and local units of government shall follow the comparable standards of Subpart C, 45 CFR 602.

26. Audit and Records

a. Financial records, supporting documents, statistical records, and other records pertinent to this grant shall be retained by the grantee for a period of 3 years from submission of the Final Project Report specified in Article 17.

(1) Records that relate to audits, appeals, litigation, or the settlement of claims arising out of the performance of the project shall be retained until such audits, appeals, litigation, or claims have been disposed of.

(2) Records relating to projects subject to special project income provisions shall be retained until 3 years from the end of the grantee's fiscal year in which the grant requirement for reporting income expires.

b. Unless court action or audit proceedings have been initiated, the grantee may substitute microfilm copies of original records.

c. The Director of the National Science Foundation and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any pertinent books, documents, papers, and records of the grantee organization and of the performing organization, if different, to make audits, examinations, excerpts and transcripts. Further, any negotiated contract in excess of \$10,000 made by the grantee shall include a provision to the effect that the grantee, the Director of the National Science Foundation, the Comptroller General of the United States, or any of their duly authorized representatives shall have access to pertinent records for similar purposes.

d. In order to avoid duplicate recordkeeping, the Foundation may make special arrangements with the grantee to retain any records that are needed for joint use. The Foundation may request transfer to its custody of records not needed by the grantee when it determines that the records possess long-term retention value. When the records are transferred to or maintained by the Foundation, the 3-year retention requirement is not applicable to the grantee. In the rare event that this provision is exercised, the Foundation will negotiate a mutually agreeable arrangement with the grantee regarding reimbursement of costs.

27. Site Visits

The Foundation, through authorized representatives, has the right, at all reasonable times, to make site visits to review project accomplishments and management control systems and to provide such technical assistance as may be required. If any site visit is made by the Foundation on the premises of the grantee or a contractor under a grant, the grantee shall provide and shall require its contractors to provide all reasonable facilities and assistance for the safety and convenience of the Government representatives in the performance of their duties. All site visits and evaluations shall be performed in such a manner as will not unduly delay the work.

28. Suspension or Termination

a. The grant may be suspended or terminated in whole or in part, when the Foundation believes that the grantee has materially failed to comply with the terms and conditions of the grant, or when the Foundation has other reasonable cause, or for any reason by mutual agree-

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ment between the Foundation and the grantee upon the request of either party, or when the parties cannot mutually agree to a termination.

b. Normally, action by the Foundation to suspend or terminate a grant will be taken only after the grantee has been informed by the Foundation, or informed of any deficiency on its part and given an opportunity to correct it; but the Foundation may immediately suspend or terminate the grant without notice when it believes such action is reasonable to protect the interests of the Government.

c. No costs incurred during a suspension period or after the effective date of a termination will be allowable, except those costs which, in the opinion of the Foundation, the grantee could not reasonably avoid or eliminate, or which were otherwise authorized by the suspension or termination notice, provided such costs would otherwise be allowable under the terms of the grant and the appropriate Federal cost principles.

d. Within 30 days of the termination date, the grantee will furnish a summary of progress under the grant and an itemized accounting of costs incurred prior to the termination date or pursuant to it above. Final allowable costs under a termination settlement shall be in accordance with the terms of the grant, including this article, and the appropriate Federal cost principles, giving due consideration to the progress under the grant. In no event will the total of NSF payments under a terminated grant exceed the grant amount, or the NSF rate share when cost sharing was anticipated, whichever is less.

e. A notice of termination other than by mutual agreement and/or the final settlement amount may be subject to review pursuant to Article 29.

f. Any suspension or termination action will be in accordance with this article and *Grant Policy Manual* Section 660.

29. Termination Review Procedure

a. Any request for review of a notice of termination should be addressed to the Assistant Director for Administration, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550. It must be postmarked no later than 30 days after the postmarked date of such notice.

b. The request for review must contain a full statement of the grantee's position and the pertinent facts and reasons in support of such position.

c. The Assistant Director for Administration will promptly acknowledge receipt of the request for review and appoint a review committee consisting of a minimum of three persons, none of whom may be either from the NSF program that is responsible for recommending and/or monitoring the scientific aspects of the project or from the Branch of the NSF Division of Grants and Contracts that is responsible for monitoring the administrative aspects of the grant.

d. Pending resolution of the request for review, the notice of termination shall remain in effect.

e. The termination review committee will request the NSF Grants Officer who issued the notice of termination to provide copies of all relevant background materials and documents. It may, at its discretion, invite representatives of the grantee and the NSF program to discuss pertinent issues and to submit such additional information as it deems appropriate. The chairman of the review committee will insure that all review activities or proceedings are adequately documented.

f. Based on its review, the committee will prepare its recommendations to the Assistant Director for Administration, who will advise the parties concerned of the decision.

30. Nondiscrimination

a. The grant and any program assisted thereby are subject to the provisions of Title VI of the Civil Rights Act of 1964 (PL 88-352), the regulations issued pursuant thereto by the Foundation (45 CFR 611), and the Assurance of Compliance which the grantee has filed with the

Foundation. No person on the basis of race, color, national origin, or handicap shall be denied from participation in, be denied benefits of, or otherwise be subjected to discrimination under the grant. In addition, if the project involves an education activity or program, as defined by Title IX of the Education Amendments of 1972 (PL 92-318; 20 U.S.C. 1681-1686), no person on the basis of sex shall be excluded from participation in the project. Further, by acceptance of the grant, the grantee assures the Foundation that it will comply with Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and the Foundation's implementing regulations (45 CFR 605) effective March 1, 1982.

b. The grantee shall obtain from each organization that applies to be or serves as a subrecipient, subgrantee or subcontractor under the grant (for other than the provision of commercially available supplies, materials, equipment, or general support services) an Assurance of Compliance with Title VI of the Civil Rights Act of 1964. Civil Rights Act assurances may be filed with the grantee in one of two ways: (1) by written notification that the appropriate Assurance of Compliance form has been executed and filed either with the Foundation or the U.S. Department of Health and Human Services; or (2) by executing and filing with the grantee an NSF Assurance of Compliance Form. The grantee shall obtain assurances pursuant to Section 504 of the Rehabilitation Act of 1973 from subrecipients by incorporating into the subagreement a provision that acceptance of the subagreement constitutes assurance.

31. National Security: Classifiable Results Originating Under NSF Grants

a. The Foundation does not have original classification authority and does not normally support classified projects. It therefore does not expect that results of NSF-supported research projects will be classifiable, except in very rare instances.

b. Executive Order 12356 (47 *Federal Register* 14,874 (1982)) states that basic scientific research information not clearly related to the national security may not be classified (Section 1.6(f)). Nevertheless, some information concerning (among other things) scientific, technological, or economic matters relating to the national security or cryptology may require classification (Section 1.3(a)).

c. There may therefore be cases when an NSF grantee originates information during the course of an NSF-supported project that the grantee believes requires classification under Executive Order 12356 (Section 1.2(e)).

d. In such a case, the grantee has the responsibility promptly to:

(1) submit the information directly to the U.S. Government agency with appropriate subject matter interest and classification authority, or, if uncertain which agency should receive the information, to the Director of the Information Security Oversight Office, General Services Administration;

(2) protect the information as though it were classified until the grantee is informed that the information does not require classification, but not longer than thirty (30) days after receipt by the agency with subject matter interest or by the General Services Administration; and

(3) notify the cognizant NSF Program Officer.

e. The Executive Order requires the agency with appropriate subject matter interest and classification authority to decide within thirty (30) days whether to classify the material. If it determines the information to require classification, the grantee shall cooperate with that agency, the Foundation, or other appropriate agencies in securing all related project notes and papers.

f. If the information is determined to require classification, the performing organization may wish or need to discontinue the project.

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32. Animal Welfare

Any grants performing research on ~~chance~~ animals shall comply with the Animal Welfare Act (PL 89-544, 1966, as amended, 7 U.S.C. 2131 et seq.) and the regulations promulgated thereunder by the Secretary of Agriculture (9 CFR, Subchapter A, Parts 1, 2, 3, and 4) pertaining to the humane care, handling, and treatment of vertebrate animals held or used for research, teaching, or other activities supported by Federal awards. The grantee is expected to ensure that the guidelines described in NIH Publication No. 85-23 (Revised 1985), *Guide for the Care and Use of Laboratory Animals*, are followed; and to comply with the "U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training" (included as an appendix to the NIH Guide).

NOTE—The grantee may request registration of its facility and a current listing of licensed dealers from the Regional Office of the Animal and Plant Health Inspection Service (APHIS), USDA, for the region in which its research facility is located. The location of the appropriate APHIS Regional Office, as well as information concerning this program, may be obtained by contacting the Chief Staff Officer, Animal Care Staff, USDA/APHIS, Federal Center Building, Hyattsville, MD 20782.

33. Research Involving Recombinant DNA Molecules

If this grant supports research involving recombinant DNA molecules, the grantee agrees to comply with the requirements of *Grant Policy Manual Section 712*.

34. Clean Air and Water

(Applicable only if the grant exceeds \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act (42 U.S.C. 1857e-8(c)(1)) or the Federal Water Pollution Control Act (33 U.S.C. 1319(e)) and is listed by EPA, or the grant is not otherwise exempt.)

The grantee agrees as follows:

a. To comply with all the requirements of Section 114 of the Clean Air Act (42 U.S.C. 1857 et seq., as amended by PL 91-604) and Section 308 of the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq., as amended by PL 92-500), respectively, relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in Section 114 and Section 308 of the Clean Air Act and the Federal Water Pollution Control Act, respectively, and all regulations and guidelines issued thereunder before the award of the grant.

b. That no portion of the work required by the grant will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date that the grant was awarded unless and until EPA eliminates the name of such facility or facilities from such listing.

c. To use its best efforts to comply with clean air standards and clean water standards / facility in which the grant is being performed.

d. To insert the provisions of this article into any nonexempt subcontract.

35. Human Research Subjects

The grantee is responsible for the protection of the rights and welfare of any human subjects involved in research, development and related activities supported by this grant. The grantee agrees to comply with the regulations published in the *Federal Register*, January 26, 1981, and revised as of March 8, 1983. Grantees are referred for guidance to 45 CFR 46, "Protection of Human Subjects," available from the Office for Protection from Research Risks, National Institutes of Health.

36. Activities Abroad

The grantee should ensure that grant activities carried on outside the United States are coordinated as necessary with appropriate Government authorities and that appropriate licenses, permits or approvals are obtained prior to undertaking proposed activities. The Foundation does not assume responsibility for grantee compliance with the laws and regulations of the country in which the work is to be conducted.

37. Resolution of Conflicting Conditions

Should there be any inconsistency between any special conditions contained in the grant and these Grant General Conditions (GC-1), the special conditions in the grant shall prevail.

Should there be any inconsistency between these Grant General Conditions (GC-1), any special conditions contained in the grant, and any NSF guides, brochures, etc., cited or included by reference in the grant, the matter should be referred to the NSF Grant Officer for guidance.

38. Liability

The Foundation cannot assume any liability for accidents, illnesses, or claims arising out of any work supported by a grant or for unauthorized use of patented or copyrighted materials. The grantee institution is advised to take such steps as may be deemed necessary to insure or protect itself, its employees and its property.

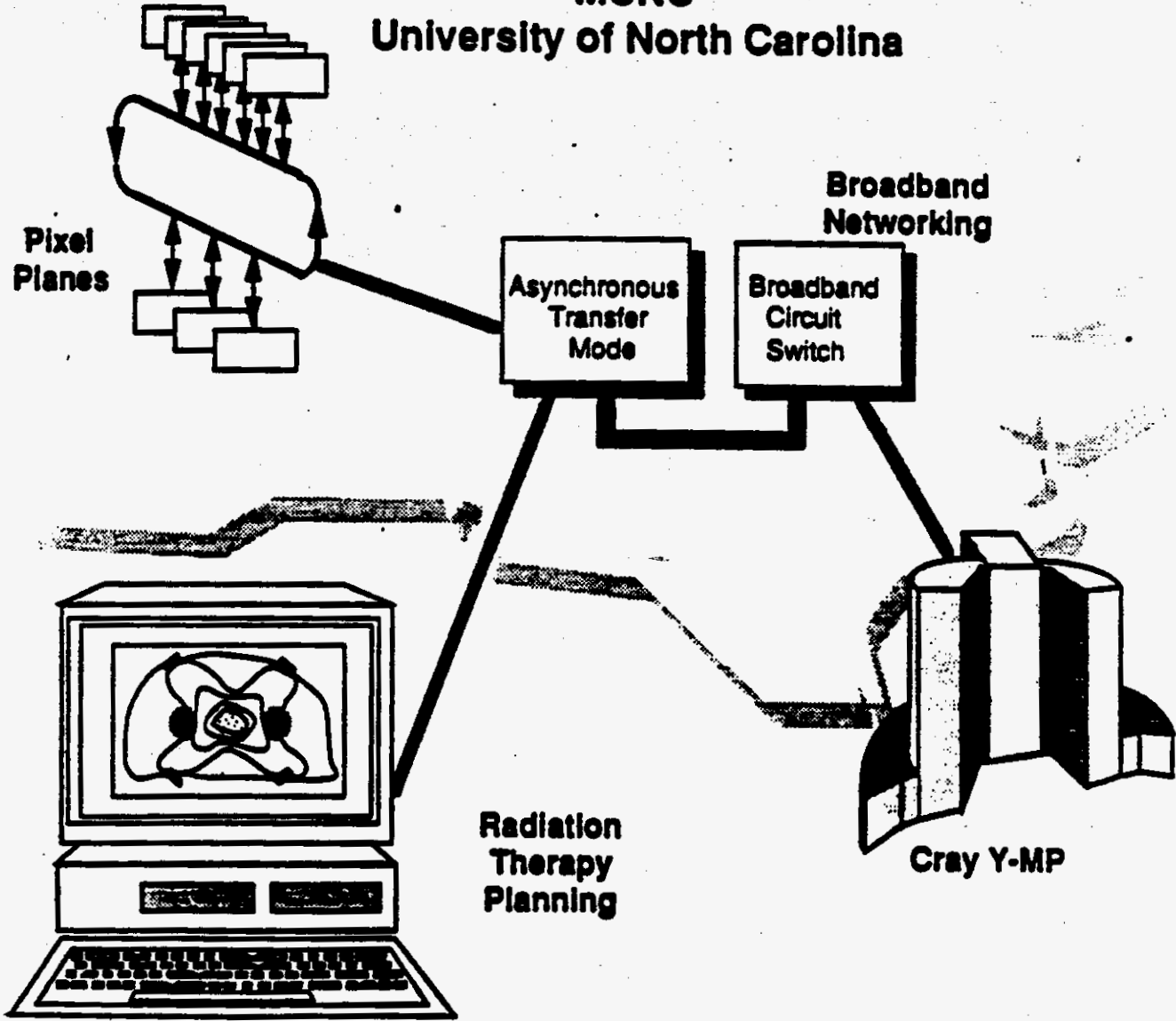
39. Limitation on Rate of Pay

Pursuant to a congressional requirement, effective October 1, 1988, no individual shall be reimbursed from FY 89 appropriated funds as a direct cost under this grant at a rate which exceeds the equivalent of \$95,000 per annum. This limitation is also intended to apply to sub-awards for substantive work under an NSF grant. (See Article 6 for additional restrictions on payments to consultants.)

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BellSouth
GTE
MCNC

University of North Carolina



VISTAnet:

A Very High Bandwidth Prototype Network for Interactive 3D Medical Imaging

E-108

MCNC CONTRACT PROPOSAL BUDGET
TO
BELLSOUTH SERVICES AND GTE TELEPHONE OPERATIONS
FOR THE PERIOD: JUNE 1, 1990 - MAY 31, 1993

	<u>YEAR I</u>	<u>YEAR II</u>	<u>YEAR III</u>	<u>TOTAL</u>
Direct Labor	83,900	74,800	79,200	237,900
Benefits	31,640	28,200	29,860	89,700
Total Direct Labor	<u>115,540</u>	<u>103,000</u>	<u>109,060</u>	<u>327,600</u>
Overhead	98,210	87,550	92,700	278,460
Expenses:				
Travel	7,000	7,400	7,850	22,250
Other Services (CRAY Cycles)	200,000	200,000	200,000	600,000
Subtotal	<u>420,750</u>	<u>397,950</u>	<u>409,610</u>	<u>1,228,310</u>
G & A	53,960	52,930	54,480	161,370
Total MCNC Incurred	<u>476,710</u>	<u>450,880</u>	<u>464,090</u>	<u>1,391,680</u>
Subcontract Expense				
Labor (includes benefits)	53,410	46,215	37,742	137,367
Graduate Student (includes FICA)	57,410	59,130	60,635	177,175
Travel	7,175	7,535	7,909	22,619
Overhead	11,800	11,286	10,630	33,716
Total Subcontract	<u>129,795</u>	<u>124,166</u>	<u>116,916</u>	<u>370,877</u>
MCNC G & A on Subcontract	<u>10,385</u>	<u>9,935</u>	<u>9,355</u>	<u>29,675</u>
Total Project Costs	<u>616,890</u>	<u>584,981</u>	<u>590,361</u>	<u>1,792,232</u>
Funding Source:				
MCNC	404,590	384,981	390,361	1,179,932
BellSouth/GTE	<u>212,300</u>	<u>200,000</u>	<u>200,000</u>	<u>612,300</u>
TOTAL	<u>516,890</u>	<u>584,981</u>	<u>590,361</u>	<u>1,792,232</u>

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Expenses:				
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Subtotal	<u>420,750</u>	<u>397,950</u>	<u>409,610</u>	<u>1,228,310</u>
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Administrative Unit	Item	Y1 FTE	Y2 FTE	Y3 FTE	Year 1 cost	Year 2 cost	Year 3 cost	Cumulative cost
Radiation Oncology	Rosenman, Co-Principal Investigator	0.2	0.2	0.2				
	Physicist/Programmer	1	1	1	\$25,000	\$26,250	\$27,563	\$78,813
	System Designer	1	1	1	\$65,000	\$66,250	\$71,663	\$204,913
	Physicist/Senior Investigator	1	1	1	\$40,000	\$42,000	\$44,100	\$126,100
	Personnel fringe benefits	0.4	0.4	0.4	\$15,000	\$15,750	\$16,538	\$47,288
	Service contract for workstation				\$30,477	\$31,855	\$33,301	\$95,633
	Application workstation				\$0	\$3,000	\$3,000	\$6,000
	Frame buffer				\$25,000	\$0	\$0	\$25,000
	Direct costs subtotal				\$150,000	\$0	\$0	\$150,000
	Indirect costs				\$350,477	\$0	\$0	\$700,954
	Radiation Oncology subtotal				\$78,087	\$187,105	\$196,164	\$733,745
	Comp Sci - MSL				\$428,565	\$83,262	\$87,293	\$248,642
	Comp Sci - MSL	Chl, Co-Principal Investigator	0.1	0.1	0.1			
Engineer		1	1	1	\$7,228	\$7,581	\$7,960	\$22,769
Technician		0.25	0.25	0.25	\$40,500	\$42,525	\$44,651	\$127,676
Support Personnel		0.2	0.2	0.2	\$8,225	\$8,638	\$9,068	\$25,929
Communications/system software RA		0.67	0.67	0.67	\$5,200	\$5,460	\$5,733	\$16,393
Hardware RA		0.67	0.67	0.67	\$17,000	\$17,850	\$18,743	\$53,593
Personnel fringe benefits		0.67	0.67	0.67	\$17,000	\$17,850	\$18,743	\$53,593
Department Computer Services					\$13,363	\$13,943	\$14,553	\$41,859
Travel					\$6,335	\$6,651	\$6,984	\$19,970
Supplies and Services					\$5,000	\$5,000	\$5,000	\$15,000
Design workstation					\$25,500	\$0	\$0	\$25,500
Direct costs subtotal					\$40,000	\$51,000	\$26,000	\$117,000
Indirect costs					\$185,342	\$0	\$0	\$185,342
MSL subtotal				\$84,677	\$176,497	\$157,435	\$418,609	
Comp Sci - Graphics	Fuchs, Co-Principal Investigator	0.1	0.1	0.1				
	Senior Investigator	0.03	0.03	0.03	\$8,500	\$8,925	\$9,371	\$26,796
	Senior Investigator	0.1	0.1	0.1	\$2,550	\$2,678	\$2,811	\$8,039
	Software Engineer	1	1	1	\$4,500	\$4,725	\$4,961	\$14,186
	Graphics RAs	2.01	2.01	2.01	\$40,000	\$42,000	\$44,100	\$126,100
	Personnel fringe benefits				\$51,000	\$53,550	\$56,228	\$160,778
	Department Computer Services				\$11,939	\$12,467	\$13,021	\$37,427
	Travel				\$7,102	\$7,457	\$7,830	\$22,389
	Materials and Supplies				\$2,000	\$2,000	\$2,000	\$6,000
	Graphics workstations				\$12,500	\$12,500	\$12,500	\$37,500
	Direct costs subtotal				\$48,000	\$40,000	\$0	\$88,000
	Indirect costs				\$188,091	\$108,301	\$0	\$296,392
	Graphics subtotal				\$62,341	\$148,301	\$152,822	\$363,464
Total				\$242,432	\$65,104	\$68,006	\$775,542	

FORM 01856

INC

NSF Patent Regulation (45 CFR 18) accordingly require that a patent rights clause be included in all subcontracts for experimental, developmental, or research work.

751.2 National Science Foundation Patent Policy

As authorized by the National Science Board at its 230th meeting, October 15-16, 1981, the Director of the National Science Foundation has issued the following statement of NSF patent policy.

a. As required by the Bayh-Dole Act and the Presidential memorandum on "Government Patent Policy," the Foundation will use the patent rights clause prescribed by the Office of Management and Budget in all its funding agreements for the performance of experimental, developmental, or research work. This includes contracts for the operation of Government-owned research facilities, unless the Foundation determines that some other provision would better serve the purposes of that Act or the interests of the United States and the general public.

b. In funding agreements covered by a treaty or agreement that provides that an international organization or foreign government, research institute, or inventor will own or share patent rights, the Foundation will acquire such patent rights as are necessary to comply with the applicable treaty or agreement.

c. The Foundation will claim no rights to inventions in funding agreements made primarily for the support of education or training, such as fellowships and traineeships. A disclaimer of interest in inventions will be included in such awards.

d. If an awardee elects not to retain rights to an invention, the Foundation will allow the inventor to retain the principal patent rights unless the awardee shows that it would be harmed by that action.

e. The Foundation will normally allow any patent rights not wanted by the awardee or inventor to be dedicated to the public through publication. However, if another Federal agency is known to be interested in the relevant technology, the Foundation may give it an opportunity to review and patent the invention so long as that does not inhibit the dissemination of the research results to the scientific community.

f. The Foundation will waive the restrictions imposed by the Bayh-Dole Act on the assignment or exclusive licensing of NSF-supported inventions by a nonprofit organization when that appears to serve the policy and objective of the Act. For identified inventions, the Foundation will waive the restrictions if the nonprofit organization obtains from the prospective assignee or licensee a firm commitment to develop and commercialize the invention. In any industry-university joint research award, the Foundation will waive the restrictions at the time of award if the nonprofit organization shows that they are unfair considering the industrial participant's contribution or that the project will not be undertaken unless they are waived.

g. In funding agreements not controlled by the Bayh-Dole Act, the Foundation will waive any of the rights or conditions normally reserved or imposed if the grantee or contractor demonstrates:

1. that the interests of the United States and the general public will be better served thereby; or
2. that it is making a substantial contribution of funds, facilities, or equipment to the work performed under the funding agreement.

h. As far as practical, the Foundation will apply the intent of this policy to funding agreements entered into before the effective dates of the Bayh-Dole Act and the Presidential memorandum.

The National Science Foundation Patent Policy contained in the regulation published on August 30, 1982 (47 FR 38124) and all previous statements of NSF Patent Policy are revoked.

751.3 Standard Patent Rights Clause

The following patent rights clause will be used in every funding agreement awarded by the Foundation that relates to scientific engineering research unless a special patent clause has been negotiated. (See GPM 753.1.) When the clause is used in a funding agreement other than a grant, grantor and grantee may be replaced by *contract* and *contractor* or other appropriate terms.

PATENT RIGHTS

a. Definitions

1. *Invention* means any invention or discovery which or may be patentable or otherwise protectable under Title 35 of the United States Code.

2. *Subject invention* means any invention of the grantee conceived or first actually reduced to practice in the performance of work under this grant.

3. *Practical application* means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

4. *Made* when used in relation to any invention means the conception or first actual reduction to practice of such invention.

5. *Small business firm* means a small business concern as defined at section 2 of Public Law 85-536 (15 USC 632), *Small Business Act*, and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standard for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12 respectively, will be used.

6. *Nonprofit organization* means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 USC 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 USC 501(a)) or any nonprofit scientific or educational organization qualified under a State nonprofit organization statute.

b. Allocation of Principal Rights

The grantee may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 USC 203. With respect to any subject invention in which the grantee retains title, the Federal Government shall have a non-exclusive, non-transferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world. If the award indicates that the subject invention is subject to an identified international agreement or treaty, the

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Foundation also has the right to direct the grantee to convey to any foreign participant such patent rights to subject inventions as are required to comply with that agreement or treaty.

c. Invention Disclosure, Election of Title and Filing of Patent Applications by Grantee

1. The grantee will disclose each subject invention to the National Science Foundation (NSF) within two months after the inventor discloses it in writing to grantee personnel responsible for the administration of patent matters. The disclosure to NSF shall be in the form of a written report and shall identify the grant under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding of the nature, purpose, operation, and, to the extent known, the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to NSF, the grantee will promptly notify NSF of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the grantee.

2. The grantee will elect in writing whether or not to retain title to any such invention by notifying NSF within twelve months of disclosure to the grantee; provided that in any case where publication, on sale or public use has initiated the one year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by NSF to a date that is no more than 60 days prior to the end of the statutory period.

3. The grantee will file its initial patent application on an elected invention within two years after election or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale or public use. The grantee will file patent applications in additional countries within either ten months of the corresponding initial patent application, or six months from the date when permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications when such filing has been prohibited by a Secrecy Order.

4. Requests for extension of the time for disclosure to NSF, election, and filing may, at the discretion of NSF, be granted.

d. Conditions When the Government May Obtain Title

1. The grantee will convey to NSF, upon written request, title to any subject invention:

(a) if the grantee fails to disclose or elect the subject invention within the times specified in c. above, or elects not to retain title.

(b) in those countries in which the grantee fails to file patent applications within the times specified in c. above; provided, however, that if the grantee has filed a patent application in a country after the times specified in c. above,

but prior to its receipt of the written request of NSF, the grantee shall continue to retain title in that country.

(c) In any country in which the grantee decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention.

e. Minimum Rights to Grantee

1. The grantee will retain a non-exclusive, royalty-free license throughout the world in each subject invention which the Government obtains title except if the grantee fails to disclose the subject invention within the time specified in c. above. The grantee's license extends to domestic subsidiaries and affiliates, if any, within the corporate structure of which the grantee is a party and includes the right to grant sublicenses of the same scope to the extent the grantee was legally obligated to do so at the time the grant was awarded. The license is transferable only with the approval of NSF except when transferred to the successor of that part of the grantee's business to which the invention pertains.

2. The grantee's domestic license may be revoked or modified by NSF to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions in the Federal Property Management Regulations. This license will not be revoked in that field of use or the geographical area in which the grantee has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of NSF to extend the grantee, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

3. Before revocation or modification of the license NSF will furnish the grantee a written notice of its intent to revoke or modify the license, and the grantee will be allowed thirty days (or such other time as may be authorized by NSF for good cause shown by the grantee) after notice to show cause why the license should not be revoked or modified. The grantee has the right to appeal, in accordance with applicable regulations in the Federal Property Management Regulations concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

f. Grantee Action to Protect Government's Interest

1. The grantee agrees to execute or to have executed and promptly deliver to NSF all instruments necessary to

(a) establish or confirm the rights the Government has throughout the world in those subject inventions which the grantee retains title, and

(b) convey title to NSF when requested under paragraph d. above, and to enable the Government to obtain patent protection throughout the world in that subject invention.

2. The grantee agrees to require, by written agreement, its employees, other than clerical and non-technical employees, to disclose promptly in writing to person

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identified as responsible for the administration of patent matters and in a format suggested by the grantee each subject invention made under this grant in order that the grantee can comply with the disclosure provisions of paragraph c. above, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information requested by c.1. above. The grantee shall instruct such employees through the employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

3. The grantee will notify NSF of any decision not to continue prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than thirty days before the expiration of the response period required by the relevant patent office.

4. The grantee agrees to include, within the specification of the United States patent application and any patent issuing thereon covering a subject invention, the following statement: "This invention was made with Government support under (identify the grant) awarded by the National Science Foundation. The Government has certain rights in this invention."

5. The grantee or its representative will complete, execute, and forward to NSF a confirmation of a License to the United States Government within two months of filing any domestic or foreign patent application.

6. The grantee or its representative will forward to NSF a copy of any United States patent covering a subject invention within two months after it is issued.

g. Subcontracts

1. The grantee will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work. The subcontractor will retain all rights provided for the grantee in this clause, and the grantee will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

2. In the case of subcontracts, at any tier, when the prime award by the Foundation was a contract (but not a grant or cooperative agreement), NSF, subcontractor, and contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the Foundation with respect to those matters covered by this clause.

h. Reporting on Utilization of Subject Inventions

The grantee agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the grantee or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the grantee, and such other data and information as NSF may reasonably require. The grantee also agrees to provide additional reports in connection with

any matter in proceedings undertaken by NSF in accordance with paragraph j. of this clause. To the extent that information supplied under this section is considered by grantee, its licensee or assignee to be privileged and confidential and is so marked, NSF agrees that, to the extent permitted by 35 USC 202(c)(5), it will not disclose such information to persons outside the Government.

i. Preference for United States Industry

Notwithstanding any other provision of this clause, the grantee agrees that neither it nor any assignee will grant any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by NSF upon a showing by the grantee or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

j. March-in Rights

The grantee agrees that with respect to any subject invention in which it has acquired title, NSF has the right in accordance with procedures in OMB Circular A-124 and NSF regulations at 45 CFR 650.13 to require the grantee, assignee or exclusive licensee of a subject invention to grant a non-exclusive, partially exclusive, or exclusive license any field of use to a responsible applicant or applicant upon terms that are reasonable under the circumstances and if the grantee, assignee, or exclusive licensee refuses such a request, NSF has the right to grant such a license itself if NSF determines that:

1. such action is necessary because the grantee or assignee has not taken, or is not expected to take within reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

2. such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the grantee, assignee, or their licensees;

3. such action is necessary to meet requirements of public use specified by Federal regulations and such requirements are not reasonably satisfied by the grantee, assignee, or licensee; or

4. such action is necessary because the agreement required by paragraph i. of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

k. Special Provisions for Grants with Nonprofit Organizations

If the grantee is a nonprofit organization, it agrees that:

1. Rights to a subject invention in the United States may not be assigned without the approval of NSF, except where such assignment is made to an organization which has as one of its primary functions the management of inventions and which is not, itself, engaged in or does not ho

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a substantial interest in other organizations engaged in the manufacture or sale of products or the use of processes that might utilize the invention or be in competition with embodiments of the invention (provided that such assignee will be subject to the same provisions as the grantee);

2. The grantee may not grant exclusive licenses under United States patents or patent applications in subject inventions to persons other than small business firms for a period in excess of the earlier of:

(a) five years from first commercial sale or use of the invention, or

(b) eight years from the date of the exclusive license excepting that time before regulatory agencies necessary to obtain premarket clearance, unless on a case-by-case basis NSF approves a longer exclusive license. If exclusive field of use licenses are granted, commercial sale or use in one field of use will not be deemed commercial sale or use as to other fields of use, and a first commercial sale or use with respect to a product of the invention will not be deemed to end the exclusive period to different subsequent products covered by the invention;

3. The grantee will share royalties collected on a subject invention with the inventor; and

4. The balance of any royalties or income earned by the grantee with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific research or education.

1. Communications

All disclosures, elections, confirmations of the government license, copies of patents, and other routine communications should be sent to the NSF Patent Paralegal, Office of the General Counsel, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550. Requests for waivers and other exceptional communications with the Foundation regarding this clause should be addressed to the NSF Intellectual Property Attorney, Office of the General Counsel, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550.

(END OF CLAUSE)

752 Copyright

752.1 Rights to Copyrightable Material

The following principles governing the treatment of copyrightable material produced under NSF awards were adopted by the National Science Board on March 16, 1984.

a. The Foundation normally will acquire only such rights to copyrightable material as are needed to achieve its purposes or to comply with the requirements of any applicable government-wide policy or international agreement.

b. To preserve incentives for private dissemination and development, the Foundation normally will not restrict or take any part of income earned from copyrightable material except as necessary to comply with the requirements of any applicable government-wide policy or international agreement.

c. In exceptional circumstances, the Foundation may restrict or eliminate an awardee's control of NSF-supported copyrightable

material a part of income earned from it, if the Foundation determines that this would best serve the purposes of a particular program or award.

752.2 Standard Copyrightable Material Clause

The following copyrightable material clause will be used every funding agreement awarded by the Foundation that relates to scientific or engineering research unless a specific copyrightable material clause has been negotiated. (See GP 753.2.) When the clause is used in a funding agreement other than a grant, *grants* and *grantees* may be replaced by *contract* and *contractor* or other appropriate terms.

COPYRIGHTABLE MATERIAL

a. *Subject writing* means any material that:

1. is or may be copyrightable under Title 17 of 1 United States Code, and

2. is produced by the grantee or its employees in performance of work under this grant.

Subject writings include such items as reports, book journal articles, software, sound recordings, video tapes and video discs.

b. *Copyright Ownership, Government License.* Except as otherwise specified in the grant or by this paragraph, the grantee may own or permit others to own copyright in subject writings. The grantee agrees that if it or anyone else does own copyright in a subject writing, the Federal government will have a nonexclusive, nontransferable, revocable, royalty-free license to exercise or have exercised for or on behalf of the United States through the world all the exclusive rights provided by copyright. Such license, however, will not include the right to: copies or phonorecords of the copyrighted works to public.

c. *Grants Affected by International Agreements.* If an award indicates it is subject to an identified international agreement or treaty, the Foundation can direct the grantee to convey to any foreign participant or otherwise dispose of such rights to subject writings as are required to comply with that agreement or treaty.

d. *Grantee Action to Protect Government Interests.* The grantee agrees to acquire, through written agreement or employment relationship, the ability to comply with the requirements of the preceding paragraphs and, in particular, to acquire the ability to convey rights in a subject writing to a foreign participant if directed by the Foundation under the previous paragraph. The grantee further agrees that transfer of copyright or any other rights to a subject writing by it or anyone whom it has allowed to own such rights, shall be made subject to the requirements of this article.

(END OF CLAUSE)

753 Special Patent and Copyright Situations

The standard patent rights clause or standard copyrightable material clause need not be applicable or will normally be modified in the following situations:

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Non-Discrimination Compliance Agreement

Contractors shall comply with the applicable provisions of the following:

Exec. Order No. 12136, P.L. 96-507, Exec. Order No. 11344, Exec. Order No. 11628, Section 8 of the Small Business Act as amended, Railroad Revitalization and Regulatory Reform Act of 1976, Exec. Order No. 11701, Exec. Order No. 11788, Exec. Order No. 12138, Section 803 of the Rehabilitation Act of 1973 as amended by P.L. 93-516, Vietnam Era Veterans' Readjustment Assistance Act of 1974 and the rules, regulations and relevant Orders of the Secretary of Labor pertaining to the Executive Order and Statutes listed above.

For contracts of or which aggregate to \$2,500 or more annually, the following table describes the clauses which are included in the contract:

1. Inclusion of the Equal Employment clause in all contracts and orders;
2. Certification of non-segregated facilities;
3. Certification that an affirmative action program has been developed and is being followed;
4. Certification that an annual Employer Information Report (EEO-1 Standard Form 100) is being followed;
5. Inclusion of the "Utilization of Minority and Women's Business Enterprises" clause in all contracts and orders;
6. Inclusion of the "Minority and Women's Business Enterprise Subcontracting Program" clause in all contracts and orders;
7. Inclusion of the "Listing of Employment Openings" clause in all contracts and orders;
8. Inclusion of the "Employment of the Handicapped" clause in all contracts and orders;

Contract Value	Clause(s) Required
\$ 2,500 to \$10,000	6
\$10,000 to \$50,000	1, 2, 5, 6, 7, 8
\$50,000 or more	1, 2, 3, 4, 5, 6, 7, 8

* Applies only for businesses with 50 or more employees

1. Equal Employment Opportunity Provisions

In accordance with Exec. Order No. 11344, dated September 24, 1968 and Part 60-1 of Title 41 of the Code of Federal Regulations (Public Contracts and Primary Management, Office of Federal Contract Compliance, Obligations of Contractors and Subcontractors), as may be amended from time to time, the parties incorporate herein by this reference the regulations and contract clauses required by these provisions to be made a part of Government contracts and subcontracts.

2. Certification of Non-segregated Facilities

The contractor certifies that it does not and will not maintain any facilities it provides for its employees in a segregated manner, or permit its employees to perform their services at any location under its control where segregated facilities are maintained and that it will obtain a similar certification prior to the award of any subcontracts.

3. Certification of Affirmative Action Program

The contractor certifies that it has developed and is maintaining an affirmative action plan as required by Part 60-3 of Title 41 of the Code of Federal Regulations.

4. Certification of Filing of Employer Information Reports

The contractor agrees to file annually, on or before the 31st day of March, complete and accurate reports on Standard Form 100 (EEO-1) or such form as may be promulgated in its place.

5. Utilization of Minority and Women's Business Enterprises

It is the policy of the Government and Ballbooth Services, as a Government contractor, that minority and women's business enterprises shall have the maximum practical opportunity to participate in the performance of contracts.

(a) The contractor agrees to use his or her best efforts to carry out the intent of his or her subcontracts to the fullest extent consistent with the efficient performance of the contract. As used in this contract, the term "minority or women's business enterprise" means a business with at least 51 percent of which is owned by minority or women group members or of publicly owned businesses, at least 51 percent of the stock of which is owned by minority or women group members. For purposes of this term, minority group members are American Blacks, Hispanic, Pacific Islanders, American Indians and Alaskan Natives. Contracts rely on certain representation by subcontractors regarding their minority or women's business enterprise in lieu of an order investigation.

6. Minority and Women's Business Enterprise Subcontracting Program

(a) The contractor agrees to establish and conduct a program and create minority and women's business enterprises (as defined in part 5 above) to be considered fully as subcontractors and support, and contract, in the execution, the Contractor shall:

- (1) Designate a liaison officer who will administer the contractor's minority and women's business enterprise program;
- (2) Provide adequate and timely consideration of the concerns known minority and women's business enterprises in all "man-to-man" decisions;
- (3) Assure that known minority and women's business enterprises will be given an equitable opportunity to compete for subcontracts, particularly in regard to solicitation, time for the preparation of bids, evaluation, award, and delivery schedules so as to facilitate the participation of the minority and women's business enterprises.

(b) Maintain records showing all procedures which have been taken to comply with the policies set forth in this clause, including the creation of a source list of minority and women's business enterprises, to their minority and women's business enterprises on the source list, and specific efforts to identify and award contracts to minority and women's business enterprises.

(c) Include the Utilization of Minority and Women's Business Enterprise clause in subcontracts which offer substantial minority and women's business enterprise subcontracting opportunities.

(d) Comply with the Government's Contracting Officer for Ballbooth Services in any studies and surveys of the contractor's minority and women's business enterprise procedures and practices that the Government's Contracting Officer may from time to time conduct.

(e) Submit periodic reports of subcontracting to known minority and women's business enterprises with respect to the records referred to in paragraph (d) above, in such form and manner and at such time that it shall then quarterly to the Government's Contracting Officer for Ballbooth Services may provide.

(f) The contractor further agrees to insert, in any subcontract having a value of more than \$200,000 (or in the case of WBE \$1,000,000) in any contract for the construction of any public facility and which a substantial subcontracting potential provisions which shall read substantially to the language of this Agreement, including this paragraph and to notify the Contracting Officer of the names of such subcontractors.

7. List of Employment Openings for Veterans

In accordance with Exec. Order 11701, dated January 24, 1972, and Part 60-502 of Title 41 of the Code of Federal Regulations, as it may be amended from time to time, the parties incorporate herein by this reference the regulations and contract clauses required by these provisions to be made part of Government contracts and subcontracts.

8. Employment of the Handicapped

In accordance with Exec. Order 11788, dated January 15, 1974, and Part 60-741 of Title 41 of the Code of Federal Regulations as may be amended from time to time, the parties incorporate herein by this reference the regulations and contract clauses required by these provisions to be made part of Government contracts and subcontracts.

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Certified by:

John K. Scott
John K. Scott, Director
Research Services

Acting For
Tom K. Scott

Grant Proposal Number:

Title

The Under _____
Institution _____ Chapel Hill

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