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#458

**AGREEMENT**

**BETWEEN**

**GAZELLE MICROCIRCUITS, INC.  
2300 OWEN STREET  
SANTA CLARA, CALIFORNIA 95054**

**AND**

**THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY  
1400 WILSON BOULEVARD  
ARLINGTON, VIRGINIA 22209-2308**

**CONCERNING**

**HIGH-SPEED (1 GIGABIT/SECOND AND HIGHER)  
FIBER OPTIC DATA COMMUNICATION GALLIUM ARSENIDE COMPONENTS**

**Agreement No: MDA972-90-H-0001**

**ARPA Order No: 7376; Appropriation Data: 9700400.1320 7376 POE20 4101 S49447 DPAC 0 5067**

**Amount of this Agreement: \$4,000,000.00**

**\$2,800,000.00**

**Effective Date: April 6, 1990**

**Authority: 10 U.S.C. 2371**

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**This Agreement is entered into between The United States of America, hereinafter called the Government, represented by The Defense Advanced Research Projects Agency (DARPA), and Gazelle Microcircuits, Inc. pursuant to and under U.S. Federal law.**

**FOR GAZELLE MICROCIRCUITS, INC.**

*Jerry F. Glawsky, Chairman*  
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**FOR THE UNITED STATES OF AMERICA  
THE DEFENSE ADVANCED  
RESEARCH PROJECTS AGENCY**

*[Signature]*  
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#458

**Purpose:** The Defense Advanced Research Projects Agency (DARPA) and Gazelle Microcircuits, Inc., (Gazelle) have a mutual interest in high-speed data communications technologies. This Agreement provides support from DARPA to Gazelle relating to high-speed gallium arsenide (GaAs) data communication components.

DARPA is the Department of Defense's central research and development organization. Its charter includes the management and direction of research and development to demonstrate the feasibility of revolutionary approaches for improved cost and performance of advanced technology for military applications. DARPA has played a major role in establishing a digital GaAs manufacturing capability because the technology offers defense systems high-speed operation with low power consumption. Due in part to DARPA's efforts, U.S. companies today manufacture the world's most complex GaAs integrated circuits with the highest yields. The purpose of DARPA's present digital GaAs program is to implement this technology and exploit the U.S. manufacturing capability for critical defense needs.

Gazelle designs, develops and manufactures high-speed GaAs integrated circuits designed to eliminate bottlenecks in computer and network systems. Because Gazelle circuits operate with standard voltage and input/output levels, they are readily incorporated into widely used commercial systems. The company has a capability unique in the world for the design, development and manufacture of such components. Gazelle is a small business funded to date by three rounds of venture capital aggregating \$13.2 million, which has established the crucial technology base for this class of components. It now plans in cooperation with DARPA to develop and bring to market a new product line for data communications applications.

DARPA's investment in Gazelle under this Agreement will provide the company with development, design, production engineering, and working capital to develop and bring to market high-speed (1 gigabit/second and higher) data communication GaAs components, electronic modules or subsystems, and application development tools. These components, modules, and supplementary tools are the enabling elements for high-speed fiber-optic data communications.

Through the financial and technical support provided under this Agreement, DARPA will secure a low-cost, assured source for a key advanced technology for defense needs. Military systems require high-bandwidth, noninterruptible, survivable communications networks for command, control, communications, and intelligence (C<sup>3</sup>I) operations. In addition, such critical military tools as parallel computers for high-throughput computation and graphics engines for large-area map displays depend on high-speed interconnections to link internal portions of the computers together. The broad commercial applicability of this technology, e.g., in computer systems and local-area networks for graphics and data communications applications, will reduce costs for the components and related subsystems significantly, thereby providing defense systems with critical components at substantial cost savings.

In addition to these technology and cost benefits for defense applications, DARPA will obtain access to research results; certain rights in data and patents; and in the case of technology developments that result in commercially marketable products, a fair return on its investment and discounts for Government purchases of related products. Gazelle recognizes that DARPA will not provide additional funding support for the Sponsored Technology as defined in Attachment 1, Program Scope.

#### **Article I.**

**Term:** The term of this Agreement commences on the effective date and continues for one year thereafter, except for Articles XIV and XV hereof which shall continue for the period set forth therein. Notwithstanding the foregoing, Gazelle obligations under this Agreement shall continue so long as the company retains uncommitted funds provided under this Agreement.

**Article II.**

**Scientific Officer:** The Scientific Officer representing DARPA under this Agreement is Dr. Arav Prabhakar, DARPA, Defense Sciences Office, 1400 Wilson Boulevard, Arlington, Virginia 22209-2308. The Gazelle technical representative under this Agreement is Mr. Andrew C. Graham at the address on the cover page of this Agreement.

**Article III.**

**Agreement Administration:** This Agreement will be administered by the Director, DARPA Contracts Management Office.

**Article IV.**

**Payments:** Prior to the submission of invoices, there shall be submitted to the Agreement Administrator a certification by Gazelle that it has an established accounting system which complies with generally accepted accounting principles, and with the requirements of this Agreement, and that appropriate arrangements have been made for receiving, distributing and accounting for Federal funds.

Payment Number	Payment Amount	Payment Date
1.	\$1,000,000.00	March 30, 1990
2.	\$1,000,000.00	April 30, 1990
3.	\$ 800,000.00	May 31, 1990
4.	\$1,200,000.00	November 30, 1990

Upon submission of invoices in accordance with the provisions of this Agreement, the Agreement Administrator shall use its best efforts to effect payment on the dates indicated above. Payments beyond \$2.8 million are contingent upon the availability of appropriated funds. Invoices hereunder shall be submitted in the original and five copies to the Agreement Administrator for certification and transmittal to the AFDW/AFO/AFMCSO, Attn: Commercial Services, Flo Byers, Bolling Air Force Base, Bldg. 5681, Washington, DC 20332-5260 where payment will be made. Payment shall be made to Gazelle at the address on the cover page of this Agreement.

**Article V.**

**DARPA and Gazelle Liaison:** During performance of the Sponsored Technology, Gazelle officials shall maintain close liaison with the Scientific Officer for the technical and scientific monitoring of the Agreement. Administrative matters should be referred to the Agreement Administrator.

In addition, the DARPA Scientific Officer or designee shall be allowed to attend Gazelle Board of Directors meetings as a non-voting observer. The terms of the Scientific Officer's participation as an observer shall be set forth in a separate agreement.

**Article VI.**

**Performance Reports:** Gazelle shall submit to the Scientific Officer a final report making full disclosure of all Sponsored Technology, the Quarterly Reports described in Attachment 2, and shall submit such other technical reports as may be mutually agreed upon with the Scientific Officer. With the approval of the Scientific Officer, reprints of published articles may be distributed as technical reports. All technical reports shall contain a statement that the research was sponsored by DARPA, including the Agreement Number. Where reports based upon research performed under this Agreement are published in scientific and technical journals or where news releases are issued with regard to the work performed hereunder, there shall be included in such publications and news releases an appropriate statement acknowledging that the research being reported was accomplished with the support of DARPA.

**Article VII.**

**Officials Not To Benefit:** No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit arising from it. However, this clause does not apply to this Agreement to the extent that this Agreement is made with a corporation for the corporation's general benefit.

**Article VIII.**

**Civil Rights Act:** This Agreement is subject to the compliance requirements of Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000-d) relating to nondiscrimination in Federally assisted programs. Gazelle has signed an Assurance of Compliance with the nondiscriminatory provisions of the Act.

**Article IX.**

**Financial Records and Reports:** Gazelle shall maintain adequate records to account for Federal funds received under this Agreement. Upon completion or revocation of this Agreement, whichever occurs earlier, Gazelle shall furnish to the Agreement Administrator, a copy of the final report prepared under Article VI. Gazelle's relevant financial records are subject to examination or audit on behalf of DARPA by the Government for a period not to exceed three years after completion of the term of the respective Article of this Agreement. The Agreement Administrator or designee shall have direct access to sufficient records and information of Gazelle, as they determine, to ensure full accountability for Federal funds under this Agreement.

**Article X.**

**Patent Rights:**

**a) Definitions.**

1) "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code.

2) "Made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.

3) "Practical application" means to manufacture, in the case of a composition of 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) "Subject invention" means any invention of Gazelle conceived or first actually reduced to practice in the performance of work on the Sponsored Technology, as shown in Attachment 1.

**b) Allocation of principal rights.** Gazelle may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which Gazelle retains title, DARPA shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

**c) Invention disclosure, election of title, and filing of patent application.**

1) Gazelle will disclose each subject invention to DARPA within two months after the inventor discloses it in writing to company personnel responsible for patent matters. The disclosure to DARPA shall be in the form of a written report and shall identify the agreement under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the

invention. The disclosure shall also identify any publication, 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 DARPA, Gazelle will promptly notify the agency of the acceptance of any manuscript describing the invention for publication or of any sale or public use planned by Gazelle.

2) Gazelle will elect in writing whether or not to retain title to any such invention by notifying DARPA within two years of disclosure to DARPA. However, in any case where publication, 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 DARPA to a date that is no more than 60 days prior to the end of the statutory period.

3) Gazelle will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title 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, or sale, or public use. Gazelle will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application or six months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

4) Requests for extension of the time for disclosure election, and filing under subparagraphs (c)(1), (2), and (3) of this clause may, at the discretion of DARPA, be granted.

d) **Conditions when the Government may obtain title.** Gazelle will convey to DARPA, upon written request, title to any subject invention--

1) If Gazelle fails to disclose or elect title to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain title; provided, that DARPA may only request title within 60 days after learning of the failure of Gazelle to disclose or elect within the specified times.

2) In those countries in which Gazelle fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if Gazelle has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of DARPA, Gazelle shall continue to retain title in that country.

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

e) **Minimum rights to Gazelle and protection of Gazelle's right to file.**

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

2) Gazelle's domestic license may be revoked or modified by DARPA to the extent necessary to achieve expeditious practical application of subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR Part 404. This license will not be revoked in that field of use or the geographical areas in which Gazelle 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 DARPA to the extent Gazelle, its licensees, or the domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

3) Before revocation or modification of the license, DARPA will furnish Gazelle a written notice of its intention to revoke or modify the license, and Gazelle will be allowed 30 days (or such other time as may be authorized for good cause shown) after the notice to show cause why the license should not be revoked or modified.

**f) Action to protect the Government's interest.**

1) Gazelle agrees to execute or to have executed and promptly deliver to DARPA all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which Gazelle elects to retain title, and (ii) convey title to DARPA when requested under paragraph (d) of this clause and to enable the Government to obtain patent protection throughout the world in that subject invention.

2) Gazelle agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by Gazelle each subject invention made under this Agreement in order that Gazelle can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish DARPA's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by subparagraph (c)(1) of this clause. Gazelle shall instruct such employees, through 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) Gazelle will notify DARPA of any decisions not to continue the 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 30 days before the expiration of the response period required by the relevant patent office.

4) Gazelle agrees to include, within the specification of any 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 agreement) awarded by DARPA. The Government has certain rights in the invention."

**g) Subcontracts.**

1) Gazelle will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work.

2) In the case of subcontracts, at any tier, DARPA, subcontractor, and Gazelle agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and DARPA with respect to the matters covered by the clause.

**h) Reporting on utilization of subject inventions.** Gazelle agrees to submit, as part of the final report, information on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by Gazelle 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 Gazelle, and such other data and information as the agency may reasonably specify. Gazelle also agrees to provide additional reports as may be requested by the agency in connection with any march-in proceeding undertaken by the agency in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), DARPA agrees it will not disclose such information to persons outside the Government without permission of Gazelle.

**i) Preference for United States industry.** Notwithstanding any other provision of this clause, Gazelle agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any product 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 DARPA upon a showing by Gazelle 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.** Gazelle agrees that, with respect to any subject invention in which it has acquired title, DARPA has the right to require Gazelle, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if Gazelle, assignee, or exclusive licensee refuses such a request DARPA has the right to grant such a license itself if DARPA determines that--

1) Such action is necessary because Gazelle or assignee has not taken, or is not expected to take within a 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 Gazelle, assignee, or their licensees;

3) Such action is necessary to meet requirements for public use and such requirements are not reasonably satisfied by Gazelle, assignee, or licensees; 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.

#### **Article XI.**

##### **Gazelle Intellectual Property:**

1) The Government shall have a nonexclusive, nontransferable, paid-up, irrevocable, worldwide license to Gazelle Intellectual Property (which shall include patents, copyrights, mask works, and trade secrets), with respect to the Sponsored Technology, for Government purposes to:

a) Make, use, export, lease, sell and otherwise transfer a machine, manufacturer, or composition of matter and to practice any method or process involved in the manufacture or use thereof;

b) Reproduce, prepare derivative works based upon, distribute copies of, perform, and display; and

c) Reproduce a mask work by any means, export or distribute a semiconductor chip product in which a mask work is embodied, and induce or knowingly cause another person to do the foregoing acts.

2) With respect to technology, processes and procedures which may be used by Gazelle in performance of work under this Agreement and which have been developed by Gazelle at its own expense, the Government shall obtain no rights therein.

3) When requested by DARPA and necessary to the exercise of rights specified in paragraph 1) of this Article, Gazelle shall provide access to necessary data (including software) for purposes of inspection and copying.



**Article XII.**

**Revocation and Termination:** Either party may terminate this Agreement in whole or in part, upon notice to and consultation with the other party, and upon a determination by DARPA that continuation of the project would not produce beneficial results commensurate with the further expenditure of funds. In addition, this Agreement may be revoked by the Agreement Administrator upon a finding that Gazelle has failed materially to comply with the provisions of the Agreement. In the event of revocation or termination, the parties shall enter into discussions leading to a written agreement settling all issues related to such revocation or termination. Any such termination or revocation shall not affect any commitment which has been made by Gazelle prior to the effective date thereof.

**Article XIII.**

**Disputes:** Any dispute concerning questions of fact or law which may arise under this Agreement shall be disposed of by agreement between the parties, or failing such agreement, by decision of the Deputy Director for Management in writing. Any such decision is final unless a party requests a review of this decision as herein provided. This review will be made by the Director, DARPA, or his designee, in consultation with the other party. Following such consultation, the Director, DARPA, will resolve the issue. To the extent permitted by law, such resolution is final and shall not be subject to further administrative review.

**Article XIV.**

**Foreign Access to Technology:** This article shall remain in effect, as long as payments are made consistent with Article IV, for a period of three years from the effective date of this Agreement.

1) **Definition - Foreign Firm or Institution:** A firm or institution organized or existing under the laws of a country other than the United States, its territories or possessions. The term includes, for purposes of this Agreement, any agency or instrumentality of a foreign government; and firms or institutions or possessions which are owned or substantially controlled by foreign governments, firms, institutions or individuals.

2) **General:** The parties agree that research findings and technology developments in 1 gigabit/second fiber optic data communication GaAs components may constitute a significant enhancement to the national defense, and to the economic vitality of the United States. Accordingly, access to important technology developments under this Agreement by foreign firms or institutions must be carefully controlled.

The controls contemplated in this Article are in addition to, and are not intended to change or supercede, the provisions of the International Traffic in Arms Regulation (41 CFR 121 et seq.), the DoD Industrial Security Regulation (DoD 5220.22-R) and the Department of Commerce Export Regulation (15 CFR 370 et seq.).

3) **Procedure:** In order to promote the national security interests of the United States and to effectuate the policies that underlie the regulations cited above and in Article X, paragraph (i), the following procedures shall apply to any transfer of the Sponsored Technology. For purposes of this paragraph, a transfer includes sale of the company and sales or licensing of patents.

Gazelle shall provide the Scientific Officer with timely notice of proposed transfers to foreign firms or institutions. If DARPA determines that the transfer may have adverse consequences to the national security interests of the United States, Gazelle and DARPA shall jointly endeavor to find alternatives to the proposed transfer which obviate or mitigate potential adverse consequences of the transfer but which provide substantially equivalent benefits to Gazelle. In any event, Gazelle shall provide written notice to the Agreement Administrator of any proposed transfer to a foreign firm or institution at least thirty days prior to the proposed date of transfer. Such notice shall cite this Article and shall state specifically what is to be transferred and the general terms of the transfer. Within thirty days of receipt of Gazelle's written notification, DARPA shall advise Gazelle whether it consents to the proposed transfer. No transfer of patents by license or sale shall take place unless DARPA concurs. In the case of a transfer involving a sale of Gazelle which constitutes a Merger within the meaning of Article XV, DARPA's rights under Article XV shall not be impaired. Furthermore, under either the Appreciation Option or the Royalty Option the minimum payments to DARPA shall be not less than \$4,000,000.00.

**Article XV.**

**Payments to DARPA:** As part of the consideration for DARPA support under this Agreement, Gazelle shall pay DARPA a fair return on its investment in the Sponsored Technology.

In the event that Gazelle develops commercially marketable products, technology, processes or systems (collectively referred to hereafter as products) based on the Sponsored Technology and to the extent that commercial sales or licenses of such products are made, DARPA shall share in the proceeds of such sales or licenses by electing to receive payments on the basis of one of the options described below. DARPA may elect its option at any time before the earliest of (i) one year from the date of this Agreement, (ii) the effective date of a registration statement filed with the Securities and Exchange Commission for the sale of Gazelle's Common Stock to the public (the initial public offering, "IPO"), or (iii) the closing date of an acquisition of Gazelle by or merger into a third party (the "Merger").

**Royalty Option:** The maximum payment to DARPA under this option shall not exceed 500 percent of the DARPA funds provided under this Agreement. DARPA shall receive a royalty of 3% of revenues from the sale or license of products incorporating the Sponsored Technology for the first five years following the date of this Agreement, 2% of revenues for the next five years and 1% of revenues for the five years thereafter. If less than the full amount of this Agreement is received by Gazelle, then the foregoing royalty percentage shall be proportionally reduced.

Royalty payments to DARPA shall accrue when payment is received by Gazelle for the sale or license of products incorporating the Sponsored Technology. Gazelle shall keep full, clear and accurate records with respect to such sales or licenses and DARPA shall have the right to audit such records at its expense at reasonable times. On or before thirty days after the last day of each calendar quarter after election of the Royalty Option, Gazelle shall furnish to DARPA a statement showing all such products sold for which payment was received during such quarter and all royalty payments received by Gazelle from licenses of such products during such quarter. With each such statement, Gazelle shall make the royalty payment shown as payable.

**Appreciation Option:** Under the Appreciation Option, to avoid possible adverse consequences associated with DARPA holding equity in Gazelle, the parties shall in good faith negotiate an alternative which provides the benefit of equity appreciation to DARPA such as substituting a stock appreciation right with respect to such shares, holding such shares in trust, or providing for a pledge of such shares. DARPA and Gazelle agree that DARPA shall be treated for this purpose as if it were the holder of that number of shares of Series C Preferred Stock of Gazelle equal to the amount funded under this Agreement divided by \$2.00. The terms and conditions applicable to the holders of the Series C Preferred Stock, and the rights, privileges, preferences and restrictions of the Series C Preferred Stock are summarized in a Memorandum of Terms for the Private Placement of Equity Securities in Gazelle dated September 1988, and in Gazelle's Articles of Incorporation, respectively, copies of which are in the possession of both parties to this Agreement.

In the case of a stock appreciation right, DARPA shall be entitled to receive the difference between the Fair Value (as defined below) of the shares of Series C Preferred Stock and \$2.00 (the "Stock Appreciation Right") as of the closing date of the IPO or Merger, as the case may be. In the case of an IPO, Fair Value shall be the initial public offering price for Gazelle's Common Stock less underwriting discounts and commissions. In the case of a Merger, Fair Value shall be the per share value of the consideration to be received by the shareholders of Gazelle in the Merger, as determined by the Board of Directors of Gazelle in good faith. In the case of an IPO, the Stock Appreciation Right shall be paid in cash to DARPA as soon as practicable following the IPO consistent with Gazelle's working capital requirements, and in any event within two years following the closing date. In the case of a Merger, the Stock Appreciation Right shall be paid to DARPA at the closing in the same form of consideration received by the other Gazelle shareholders. If DARPA is precluded by law from receiving certain portions of such consideration, Gazelle shall negotiate in good faith with the other party to the Merger to tender appropriate other consideration of equal value to DARPA, consistent with applicable tax and accounting limitations on such variation of consideration.

If a trust option is exercised, the shares of Series C Preferred Stock shall be issued by Gazelle in the name of the trust. In the case of a pledge, the shares shall be issued upon the closing date of the IPO or Merger, as the case may be, and shall be subject to appropriate restrictions under applicable securities laws.

**Article XVI.**

**Discounts:** The discounts described in this Article relate to Gazelle products which are or substantially consist of high-speed GaAs data communications components directly resulting from the Sponsored Technology. When Gazelle standard products are sold commercially, to the general public, they shall be sold to any agency or instrumentality of the United States Government at a price at least five percent less than the price offered to Gazelle's most favored commercial customer. Such discounts shall apply only to direct sales from Gazelle to a Government agency or instrumentality and not to sales through a contractor or purchasing or sales agent. Such discounts shall be applicable only when the terms and conditions of the Government order are substantially similar to the terms and conditions offered to the most favored commercial customer with respect to quantity, warranty and delivery schedule.

## PROGRAM SCOPE

(1) Gazelle shall design, develop, document, produce, and introduce GaAs digital chips, electronic modules, and application development tools with companion software for high-speed (1 gigabit/second and higher) fiber-optic communications applications.

(2) Sponsored Technology. The Sponsored Technology shall be defined to include work performed in this attachment, even if completed beyond the term of this Agreement, and contemporaneous related work, except that work, specifically funded by customers of Gazelle, which does not result in standard products made available for sale to the general public.

(3) Specific Tasks. Specific tasks under this Agreement and their projected periods of performance include:

A. Integrated Circuit Design and Introduction:

1. Engineer, introduce and release to production the 1 gigabit/second (Gbs) transmitter (Tx) and receiver (Rx) circuits. 4/90 - 9/90.
2. Retool for four-inch volume production 1 Gbs Tx mask set. 9/90 - 12/90.
3. Retool for four-inch volume production 1 Gbs Rx mask set. 9/90 - 12/90.
4. Optimize 1 Gbs circuit performance. 9/90 - 9/91.
5. Engineer, introduce and release to production the 1.2 Gbs Tx and Rx circuits. 9/90 - 9/91.
6. Design and develop 1.5 Gbs chip set. 4/90 - 3/91.

B. Board Design and Introduction:

1. Design, document and introduce the 1 Gbs coax board. 4/90 - 10/90.
2. Design, document and introduce the 1 Gbs fiber board. 4/90 - 12/90.
3. Design, document and introduce the 1.2 Gbs coax board. 9/90 - 9/91.
4. Design, document and introduce the 1.2 Gbs fiber board. 9/90 - 9/91.

C. Software and Hardware Development System Design and Introduction:

1. Design, document and introduce the 1 Gbs development system. 4/90 - 10/90.
2. Design, document and introduce the 1.2 Gbs development system. 9/90 - 9/91.

D. Process Development and Installation:

1. Initiate the quality, reliability, and test suite on 1-micron Hot Rod™ technology. 4/90 - 5/90.
2. Initiate the quality, reliability, and test suite on 0.7-micron Hot Rod™ technology. 6/90 - 8/90.
3. Complete all 1 Gbs circuit quality and reliability test suites. 5/90 - 12/90.
4. Complete all 1.2 Gbs circuit quality and reliability test suites. 8/90 - 12/91.
5. Initiate development of low-cost package for 1 Gbs Hot Rod™ chip set. 6/90 - 3/91.
6. Optimize laser trim of the phase-locked loop/voltage-controlled oscillator to enhance yield and performance. 4/90 - 12/90.
7. Perform ongoing yield improvement, including process modeling and modifications, production engineering, test engineering, assembly, and package engineering. 4/90 - 12/91.

8. Evaluate 3 domestic high-speed (1 Gbs and higher) fiber optic module suppliers and introduce modules into Gazelle products. 4/90 - 12/91.
9. Perform ongoing characterization of optical performance with different media and connection alternatives. 6/90 - 12/91.
10. Develop and install automatic test hardware and software. 9/90 - 12/91.

**REPORT REQUIREMENTS**

- (1) Quarterly Reports shall consist of a short technical summary and financial status report, which shall contain the following information:

Agreement Number: MDA972-90-H-0001

Date:

Title of Effort: High-Speed (1 Gigabit/Second and Higher) Fiber Optic Data Communication Gallium Arsenide Components

Performer: Gazelle Microcircuits, Inc.

Principal Points of Contact:

DARPA Scientific Officer: Dr. Arati Prabhakar

Gazelle Technical Representative: Mr. Andrew C. Graham

Supported by DARPA

- (a) Brief statement of work performed during the reporting period, and
- (b) A breakdown by major task area of funds expended during the period, appropriately marked by Gazelle to identify any company-sensitive financial information.

Quarterly Reports shall be submitted within 30 days after the end of the quarter.

- (2) The Final Report shall include:

- (a) Data required in Quarterly Reports covering the term of the Agreement;
- (b) Relevant patent disclosures, mask works and copyright information; and
- (c) Any collateral material relevant to the Sponsored Technology.

The Final Report shall be submitted within 60 days after the term of the Agreement.