

AGREEMENT BETWEEN THE
DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND THE
COMMISSARIAT A L'ENERGIE ATOMIQUE OF FRANCE
FOR
COOPERATION IN RESEARCH, DEVELOPMENT AND APPLICATIONS OF HIGH
ENERGY LASERS AND HIGH ENERGY LASER-MATTER INTERACTION PHYSICS

WHEREAS:

The Department of Energy of the United States of America (DOE) and the Commissariat a l'**Energie** Atomique of France (CEA) (hereinafter referred to as the "Parties")

Noting that the Parties share an interest in research, development, and applications of high energy lasers and high energy laser-matter interaction physics leading to the capability for conducting inertial confinement fusion (ICF) in the laboratory and

Recognizing that sharing tasks, facilities, scientific, and technical information, costs, and human resources would result in achievement of objectives more efficiently, including achieving greater results at existing levels of expenditure and

Considering that both Parties have initiated activities in support of the design and construction of megajoule-class solid state laser facilities with experimental and ancillary systems to develop the full potential of inertial confinement fusion:

HAVE AGREED AS FOLLOWS:

ARTICLE 1
OBJECTIVES

- 1.1 The purpose of this Agreement is to conduct a joint program of scientific cooperation in:
- a. Utilization of high power and energy lasers in laser-matter interaction physics research, diagnostic development and associated technology advancement deemed unclassified by both parties.
 - b. Research and development leading to cost-effective megajoule-class solid-state lasers, target experimental chambers, and support systems for demonstrating ICF ignition in the laboratory.

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This cooperation shall be on a basis of mutual scientific benefit and reciprocity.

- 1.2 The DOE shall use the expertise of DOE contractors and laboratories, including the Lawrence Livermore National Laboratory (LLNL) and others, as appropriate, and the CEA shall use the expertise of CEA contractors and laboratories, including the Centre d'Etudes de Limeil-Valenton (CEL-V) and others, as appropriate.

ARTICLE 2
AREAS OF COOPERATION

The areas of cooperation shall include the following:

- 2.1 **Enhanced performance of existing ICF research facilities** - focusing on maintenance and improvements to the Nova facility at LLNL and the Phebus facility at CEL-V in precision control of target irradiation parameters.
- 2.2 **High-power, high-energy solid-state lasers** - developing the science and technology, including theoretical and computational modeling capabilities, for more cost-effective megajoule-class solid-state laser systems capable of achieving ICF ignition.
- 2.3 **Target experimental chambers and support systems** - emphasizing development of systems meeting the requirements for containing and shielding significant ICF target experimental yields.
- 2.4 **Laser/plasma diagnostics** - developing diagnostics and associated computational techniques to define and interpret experiments.
- 2.5 **Unclassified laser/plasma interaction physics** - emphasizing the interaction of high intensity, short wavelength laser radiation with matter and including, but not limited to, atomic physics, x-ray conversion, parametric processes, energy transport processes in plasmas, hydrodynamics of the plasma corona with unclassified targets, and the influence of the characteristics of laser pulses on laser plasma coupling.
- 2.6 Other areas of cooperation may be undertaken by written agreement of the Parties.

The Parties agree that no classified information of any nature shall be exchanged under this Agreement.

ARTICLE 3
FORMS OF COOPERATION

Cooperation in accordance with this Agreement may include:

- 3.1 Exchange of information and data on scientific and technical activities, development practices and results, and computational techniques, including exchange of business confidential information in accordance with the terms and conditions of Article 6 - Intellectual Property Rights.
- 3.2 Exchange of scientists, engineers, and other specialists for agreed periods of time in order to participate in experiments, analysis, design, and other R&D activities conducted in research centers, laboratories, universities, and other facilities and enterprises of each of the Parties, or its associated organizations or contractors in accordance with Article 5 - Assignment of Personnel.
- 3.3 Exchange of equipment, instruments, and components in accordance with Article 7 - Exchange of Equipment.
- 3.4 Exchange and provision of samples and materials for experiments, testing, and evaluation in accordance with Article 8 - Materials and Samples.
- 3.5 Organization of technical seminars and meetings.
- 3.6 Conducting R&D related to areas of cooperation outlined in Article 2 in accordance with the terms and conditions set forth in appropriate Implementing Arrangements.
- 3.7 Other forms of cooperation mutually agreed to in writing.

ARTICLE 4
MANAGEMENT

- 4.1 The Parties shall establish a Coordinating Committee that shall be responsible for the overall management of the cooperative activities under this Agreement. The Coordinating Committee shall consist of two members, one from each Party. These appointees (hereinafter referred to as Co-Chairmen) shall each designate a person or persons, selected from the Parties' participating laboratories, who shall serve as the point of contact for the management of tasks under this Agreement. In addition the co-chairmen shall also designate technical advisor and consultants, as appropriate.

- 4.2 The Coordinating Committee shall meet four times each year, alternately in the United States and France, or at a place and time mutually agreed upon. The Coordinating Committee shall have the general responsibility for maintenance and improvement of the joint effort of the Parties and shall resolve any outstanding scientific, technological or administrative problems in the Areas of Cooperation listed in Article 2. In resolving these problems, the Coordinating Committee shall review previous as well as proposed future activities, including the objectives and scope of work, and identify and/or approve appropriate activities. Additional technical meetings of a topical nature shall be held as necessary to complete approved activities.
- 4.3 All decisions of the Coordinating Committee shall be by unanimity. For making such decisions, each Party shall have one vote, to be cast by its Co-Chairman, or a designated alternate. The Coordinating Committee may, where appropriate, make decisions by exchanging correspondence between the Co-Chairmen.

ARTICLE 5
ASSIGNMENT OF PERSONNEL

- 5.1 Whenever a personnel assignment is contemplated under this Agreement, each Party shall ensure that qualified personnel are selected and are acceptable to the other Party.
- 5.2 Each assignment shall be the subject of a separate written personnel assignment arrangement between the Parties.
- 5.3 Each Party shall be responsible for the salaries, insurance, and allowances to be paid its personnel.
- 5.4 Each Party shall pay for the travel and living expenses of its personnel, unless otherwise agreed in writing.
- 5.5 The host establishment shall do its best to arrange for suitable accommodations for the assigned personnel and their families on a mutually agreeable, reciprocal basis.
- 5.6 Each Party shall provide all necessary assistance to the assigned personnel (and their families) as regards administrative formalities, such as travel arrangements and immigration services.
- 5.7 The assigned personnel of each Party shall conform to the general and special rules of work and safety regulations in force at the host establishment, or as agreed in a separate personnel assignment arrangement.

ARTICLE 6
INTELLECTUAL PROPERTY RIGHTS

The treatment of intellectual property created or furnished in the course of cooperative activities under this Agreement is provided for in the Annex which shall form an integral part of this Agreement and shall apply to all activities conducted under the auspices of this Agreement.

ARTICLE 7
EXCHANGE OF EQUIPMENT

Each Party agrees that, unless otherwise agreed in writing, in the event equipment, instruments or components (hereinafter referred to as "equipment") are to be exchanged or supplied by one Party (the sending Party) to the other Party (the receiving Party) under this Agreement, the following provisions covering the shipment and use of the equipment shall apply:

- 7.1 The sending Party shall supply, as soon as possible, a detailed list of the equipment to be provided together with the necessary specifications and technical information documentation.
- 7.2 The equipment, spare parts, and documentation supplied by the sending Party shall remain the property of the sending Party and shall be returned to the sending Party upon completion of the mutually agreed upon activity unless otherwise agreed.
- 7.3 The receiving Party shall provide the necessary premises, shelter, and safekeeping for the equipment, and shall provide for electric power, water, gas, etc., in accordance with technical requirements which shall be mutually agreed upon. Any damage to the equipment or spare parts while in the custody of the receiving Party shall be repaired or the damaged part replaced by the receiving Party.
- 7.4 Responsibility for expenses, safekeeping, and insurance during the transport of the equipment from the original location in the country of the sending Party to the place of entry in the country of the receiving Party shall be with the sending Party. Responsibility for expenses, safekeeping, and insurance during the transport of the equipment from the place of entry in the country of the receiving Party to the final destination in the country of the receiving Party shall be with the receiving Party.

- 7.5 Upon return of the equipment, the receiving Party shall be responsible for expenses, safekeeping, and insurance during the return of the equipment to the place of entry in the country of the sending Party. Responsibility for expenses, safekeeping, and insurance during the transport of the equipment from the place of entry in the country of the sending Party to the final destination in the country of the sending Party shall be with the sending Party.
- 7.6 The equipment provided by the sending Party for carrying out mutually agreed upon activities shall be considered to be of a scientific, not commercial, character.

ARTICLE 8
MATERIALS AND SAMPLES

The Parties agree that, unless otherwise agreed in writing, in the event materials or samples are provided by one Party (the sending Party) to the other Party (the receiving Party), the following provisions shall apply with respect to the transportation and use of such materials or samples:

- 8.1 All materials or samples provided by the sending Party to the receiving Party shall become the property of the receiving Party upon delivery, and shall not be returned to the sending Party.
- 8.2 Where one Party requests that materials or samples be provided by the other Party, the Party making the request shall bear all costs and expenses associated with the ~~transportation of the materials or samples~~ from the location of the sending Party to the final destination.
- 8.3 Each Party shall promptly disclose to the other Party all information arising from the examination or testing of materials or samples exchanged under this Agreement.

ARTICLE 9
GENERAL PROVISIONS

- 9.1 The Parties shall use all reasonable skill and care in carrying out their responsibilities and duties under this Agreement in accordance with all applicable laws and regulations.
- 9.2 Compensation for damages incurred during the implementation of this Agreement shall be in accordance with the applicable laws of the countries of the Parties.

- 9.3 Nothing in this Agreement is intended to affect arrangements for cooperation or collaboration between the Parties or any other arrangements of the Parties in existence on the effective date of this Agreement.
- 9.4 Cooperation under this Agreement shall be in accordance with the laws and regulations of the respective countries. All questions related to this Agreement during its term shall be settled by the Parties by mutual agreement. Disputes arising under this Agreement should be resolved through discussions between the Parties. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties agree otherwise in writing, the arbitration rules of Uncitral shall govern.

ARTICLE 10
FUNDING

Except as otherwise agreed in writing, all costs resulting from this Agreement shall be borne by the Party that incurs them. The obligations of each Party under this Agreement are subject to the availability of appropriated funds.

ARTICLE 11
EFFECTIVE DATE, DURATION AND TERMINATION

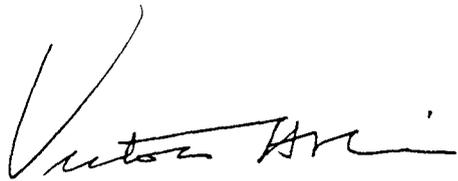
- 11.1 ~~This Agreement~~ shall ~~enter into force upon the~~ date of last signature and shall remain in force for a period of ten years. It may be amended or extended by mutual written agreement of both Parties.
- 11.2 This Agreement may be terminated at any time by either Party upon six months advance notification in writing to the other Party. Such termination shall be without prejudice to the rights, including license rights, which may have accrued under this Agreement to either Party up to the date of such termination.
- 11.3 All joint efforts and experiments not completed at the expiration or termination of this agreement may be continued until their expiration under the terms of this agreement.

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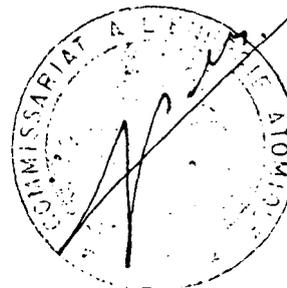
DONE, in duplicate, in the English and French languages, each being equally authentic.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:

FOR THE COMMISSARIAT A
L'ENERGIE ATOMIQUE OF FRANCE:



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ANNEX - INTELLECTUAL PROPERTY

PREAMBLE

PURSUANT TO ARTICLE 6 OF THIS AGREEMENT;

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this agreement and relevant implementing arrangements. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this annex.

I - SCOPE

I-A. This annex is applicable to all cooperative activities undertaken by the Parties or by the relevant entities (hereinafter "cooperative entities") pursuant to this agreement, except as otherwise specifically agreed by the Parties or their cooperative entities.

I-B. For purposes of this agreement, "intellectual property" shall have the meaning found in Article 2 of the **convention** establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.

I-C. This annex addresses the allocation of rights, interests, and royalties between the Parties. Each Party shall ensure that the other Party or cooperative entities can obtain the rights to **intellectual property allocated in accordance with the annex.** The allocation between a Party and participants on behalf of this Party in the cooperative activities, which shall be determined by the Party's laws and practices, shall not be altered or prejudiced by application of this annex.

I-D. Disputes concerning intellectual property arising under this agreement should be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of UNCITRAL shall govern.

I-E. Termination or expiration of this agreement shall not affect the rights or obligations under this annex.

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II - ALLOCATION OF RIGHTS

II-A. Each Party, subject to the restrictions of Article III of this annex, shall be entitled to a nonexclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports directly arising under this agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. Each Party **or** its cooperative entities shall have the right to review a translation prior to public distribution.

II-B. Rights to all forms of intellectual property, other than those rights described in section II(A) above, shall be allocated as follows:

II-B/1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host country with regard to awards, bonuses, benefits, or any other rewards, in accordance with the policies of the host institution.

II-B/2(A). For intellectual property created during joint research, the Parties or their cooperative entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example in research areas likely to lead rapidly to industrial applications, or within a reasonable time ~~from the time a Party becomes aware of the~~ creation of intellectual property. The technology management plan shall consider the relative contributions of the Parties and their cooperative entities, the benefits of exclusive or non-exclusive licensing by territory or for field of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their cooperative entities.

II-B/2(B). If the Parties or their cooperative entities cannot reach agreement on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a country, they shall share equally the reasonable cost of intellectual property protection in that country.

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II-B/2(C). A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant implementing agreement, otherwise the allocation of rights to intellectual property will be in accordance with paragraph II-B/1.

II-B/Z(D). In the event that either Party believes that a particular joint research project under this agreement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties, the Parties shall immediately hold discussions to determine the allocation of the rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no agreement can be reached within a three month period from the date of the request for discussions, the Parties shall cease the cooperation in the project in question. Notwithstanding paragraphs II-B/2(A) and (B), rights to any intellectual property which has been created will be resolved in accordance with the provisions of Article I-D.

III - BUSINESS-CONFIDENTIAL INFORMATION

In the event that information identified in a timely fashion as business-confidential is furnished or created under the agreement, each Party and its cooperative entities shall protect such information in accordance with applicable laws, regulations, and administrative practice. Information may be identified as business-confidential information if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the ~~information is not generally~~ .&now or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential. Without prior written consent, neither of the Parties shall disclose any **business-** confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosures shall be for use only within the scope of their contracts with the Parties relating to cooperation under the agreement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably expected to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

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