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Updated **08-04-08**

Deleted: 07-10-08

<p align="center">SUBCONTRACT</p> <p align="center">NO. B571534</p>	 <p>Lawrence Livermore National Laboratory Supply Chain Management Department P.O. Box 5012 Livermore, CA 94551</p>
<p>Subcontractor:</p> <p>TBD</p>	<p>LLNS Contract Administrator:</p> <p>Gary M. Ward Phone: (925) 423-5952 Fax: (925) 423-8019 E-Mail: ward31@llnl.gov</p>

Introduction

This is a Fixed Price Subcontract for research and development work to advance technologies for petascale computing, as further described herein.

The parties to this Subcontract are Lawrence Livermore National Security, LLC (hereinafter called "LLNS") and the party identified above as the "Subcontractor."

This is a Subcontract under Prime Contract No. DE-AC52-07NA27344 between LLNS and the United States Government (hereinafter called "Government"), represented by the Department of Energy National Nuclear Security Administration (hereinafter called "DOE/NNSA"), for the management and operation of the Lawrence Livermore National Laboratory (hereinafter called "LLNL") and the performance of certain research and development work.

Agreement

The parties agree to perform their respective obligations in accordance with the terms, conditions, and provisions of the attached SCHEDULE OF ARTICLES and any documents referenced or incorporated therein, which together with this Subcontract Signature Page shall collectively constitute the entire Subcontract and shall supersede all prior negotiations, representations, or agreements, whether verbal or written.

TBD

**LAWRENCE LIVERMORE
NATIONAL SECURITY, LLC**

BY: _____	BY: _____ Gary M. Ward
TITLE: _____	TITLE: <u>Contract Administrator</u> LLNL Supply Chain Management Department
DATE: _____	DATE: _____

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SCHEDULE OF ARTICLES FOR SUBCONTRACT NO. B571534

ARTICLE 1 – INCORPORATED DOCUMENTS

The following documents and forms are hereby incorporated as a part of this Schedule of Articles of the Subcontract and are referenced, or attached hereto.

Documents

GENERAL PROVISIONS FOR FIXED PRICE SUPPLIES AND SERVICES (GPs # 600C; 7/10/08)

STATEMENT OF WORK (Date)

MILESTONE PAYMENT SCHEDULE (Date)

SITE SERVICES REQUIREMENTS (SSR ES&H LEVEL 0; 04/01/08) *

SECURITY AND SITE ACCESS PROVISIONS (S&SAP; 10/01/07) *

SMALL BUSINESS SUBCONTRACTING PLAN (Date)

- (Note: a Small Business Subcontracting Plan is required for any award made to a large business)

* The documents and forms marked with an asterisk are available on-line at the following website: <http://supplychain.llnl.gov/> (under Supplier Information, select either General Provisions & Forms, or Special Provisions).

In the event any attachments, specifications, drawings or other documents referenced or incorporated in this Subcontract reference “The Regents of the University of California”, “University”, or “U.C.”, all such references shall mean “Lawrence Livermore National Security, LLC” or “LLNS”, respectively.

ARTICLE 2 – SCOPE OF WORK

- A. The Subcontractor shall perform work generally described as research and development work to advance technologies for petascale computing. The work is more specifically described in the Statement of Work (SOW).
- B. The Subcontractor shall furnish all personnel, supervision, materials, supplies, equipment, tools, facilities, transportation, testing, and other incidental items and services necessary for performance of the work, except for Government Property specified herein to be furnished by LLNS. The Subcontractor shall deliver the materials, products, supplies, reports and residuals, as specified.
- C. The work shall be performed by the Subcontractor at the Subcontractor's facility located at TBD, at the LLNL, and at other locations approved by LLNS.
- D. Acceptance of the work under this Subcontract shall be based on the Subcontractor's performance and completion of the work in consonance with high professional standards and compliance with the delivery and reporting requirements specified herein.

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ARTICLE 3 – SAFETY-RELATED REQUIREMENTS

- A. **General.** The Subcontractor shall comply with all ES&H requirements, training, and associated safety documents referenced, attached, or incorporated to this Subcontract, including any incorporated safety related documents submitted by the Subcontractor and reviewed and accepted by LLNS. The Subcontractor shall also comply with, and assist LLNS and the DOE/NNSA in complying with, the safety and health requirements identified in, or applicable to, this Subcontract.
- B. **Safety Standards and Testing.** Materials, supplies, and equipment furnished or used by the Subcontractor under this Subcontract shall meet nationally recognized safety standards or be tested by the Subcontractor in a manner demonstrating they are safe for use. All electrical equipment, components, conductors, and other electrical material shall be of a type that is listed, labeled, or tested by a Nationally Recognized Testing Laboratory (NRTL) in accordance with Title 29, Part 1910, *Occupational Safety and Health Standards*, of the Code of Federal Regulations (29 CFR 1910). The Subcontractor shall notify the LLNS Contract Administrator and the LLNS Technical Representative, in writing, of any materials, supplies, or equipment to be furnished or used under this Subcontract that does not meet these requirements.

ARTICLE 4 - INJURY AND ILLNESS REPORTING

- A. The Subcontractor shall immediately notify the LLNL Emergency Dispatch Center, at 925-422-7595 (or by phone on site dial 911 or by cell phone on site dial 925-447-6880) of any work-related injury to or illness of Subcontractor or lower-tier subcontractor personnel working at any LLNL site that results in a fatality, immediate in-patient hospitalization or immediate scheduled admittance, or any single occurrence that results in days away from work for three or more personnel.
- B. The Subcontractor shall provide a report of all new recordable fatalities, injuries, and illnesses involving either Subcontractor or lower-tier subcontractor personnel working at LLNL sites. The report shall be submitted on DOE Form F 5484.3, *Individual Accident/Incident Report*, in lieu of OSHA Form 301, *Injury and Illness Incident Report*, within seven working days of a recordable work-related fatality, injury, or illness. DOE Form F 5484.3 is located at the following website: <http://www.directives.doe.gov/pdfs/forms/5484-3.pdf>. A recordable work-related injury or illness is one that results in a fatality, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness, or diagnosis of a significant injury or illness by a physician or other licensed health care professional (29 CFR 1904). This requirement to report recordable work-related injuries or illnesses includes all the requirements for recordable incidents as described in 29 CFR 1904. Privacy cases should be noted so appropriate steps can be taken to protect the privacy of injured personnel (29 CFR 1904.29).
- C. The reports shall be sent to the LLNL Environmental, Safety, Health and Quality Office, Attention: Occupational Injury-Illness Records Manager, L-510, 7000 East Avenue, Livermore, CA 94550.

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- D. The Subcontractor shall allow LLNS access to and review of the following.
1. Subcontractor's logs and summaries of all recordable occupational injuries and illnesses (OSHA No. 300 and 300A Forms or State Equivalent) maintained by the Subcontractor.
 2. Subcontractor's injury or illness prevention plans and written Injury and Illness Prevention Program (IIPP) established, or which are required by law to be established.
- E. These requirements are in addition to, and do not replace, the Subcontractor's injury and illness reporting or record-keeping obligations under other applicable regulations.

ARTICLE 5 – PERIOD OF PERFORMANCE

The work described in ARTICLE 2 - SCOPE OF WORK shall be completed in accordance with the Milestone Payment Schedule incorporated herein. The completion date of this Subcontract shall be **TBD**.

ARTICLE 6 – PRICE AND PAYMENT

A. Fixed Price

The Subcontractor shall perform this Subcontract for the total fixed price of **\$TBD**.

The fixed price stated above does not include and LLNS shall not be charged for any state sales & use tax. LLNS holds California State Resale Permit No. SR-CH 100-978248.

B. Allocated Funding Limit

Full funding is not presently available for this Subcontract. The total funding amount currently allocated for payments under this Subcontract (the "allocated funding limit") is **\$TBD**. The allocated funding limit shall cover performance of specific milestones of the Milestone Payment Schedule, identified as follows.

Milestones Authorized for Performance

TBD

It is anticipated that LLNS will periodically increase the allocated funding limit, subject to annual appropriated funding from Congress. The allocated funding limit may only be changed by a written unilateral modification to this Subcontract issued by the LLNS Contract Administrator, or a designee.

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C. Limitation of LLNS' Liability

LLNS' obligation for payment hereunder is expressly limited to the allocated funding limit of this Subcontract, any other provision to the contrary notwithstanding. In no event shall LLNS' liability to the Subcontractor hereunder exceed the allocated funding limit of this Subcontract. The Subcontractor is not obligated to perform work or otherwise continue performance beyond the milestones specifically authorized for performance and identified in Paragraph B, above.

D. Work Authorization

LLNS will use a phased approach to authorizing work under this Subcontract. The Subcontractor is only authorized and obligated to perform work for specific milestones, which are identified in Paragraph B, above. It is anticipated that LLNS will periodically authorize additional milestones for performance, subject to annual appropriated funding from Congress and research results achieved by the Subcontractor. LLNS will authorize additional milestones for performance under this Subcontract by a written unilateral modification to this Subcontract issued by LLNS Contract Administrator, or a designee.

E. Invoices and Milestone Payments

The Subcontractor shall submit its invoice in PDF format via email, providing a detailed statement of the milestone(s) achieved. The Subcontractor shall submit its invoice upon completion of the milestone(s) to the LLNS Contract Administrator at the following address.

ward31@llnl.gov

LLNS will verify completion of each milestone. Title to deliverable items or deliverable portions thereof shall vest in the Government immediately upon the date of the milestone payment.

F. Payment Terms

The terms of payment will be 30 days after receipt of a proper invoice. Payment amounts shall be less any applicable adjustments, credits, offsets, or tax withholds. Payment on an invoice shall not constitute final acceptance of the related performance.

ARTICLE 7 – NO COST CANCELLATION

LLNS and the Subcontractor recognize this Subcontract involves the development of cutting-edge technology under aggressive schedules. LLNS and the Subcontractor agree (i) that the Subcontractor shall use reasonable efforts to deliver in accordance with the requirements and schedules set forth in this Subcontract, (ii) to reasonably consider limitations which may occur in meeting obligations under this Subcontract, and (iii) the technical checkpoints identified within SOW Paragraph **TBD** shall be used to review technical progress and schedules, which may be revised. Within 15 days after completion of a technical checkpoint, the Subcontractor may decide to cancel its participation in the program by providing written notice of its decision to the LLNS Contract Administrator. If no such written notice is

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received by LLNS, then the Subcontractor's obligation to proceed hereunder shall continue. In the event that the Subcontractor decides to cancel its participation in the program, then LLNS' obligation for payment to the Subcontractor shall be solely and expressly limited to payment for completed milestones, which are authorized and funded for performance as identified in Article 6, Paragraph B. of this Subcontract.

ARTICLE 8 – COORDINATION AND ADMINISTRATION

- A. The LLNS Contract Administrator for this Subcontract is Gary Ward, or designee. All matters relating to the administration, performance and non-technical interpretation of this Subcontract shall be directed to the LLNS Contract Administrator. The Subcontractor shall direct all notices and requests for approval to the LLNS Contract Administrator. The LLNS Contract Administrator will issue any notices or non-technical approvals to the Subcontractor.
- B. The LLNS Technical Representative for this Subcontract is Mark Seager, or designee. The LLNS Technical Representative will provide technical direction in connection with the work to be performed under this Subcontract. The term "technical direction" is defined to include (1) direction to the Subcontractor which assist in the interpretation of drawings, specifications, or technical portions of the work description; and (2) the review and approval of technical reports, drawings, specifications, and information to be delivered by the Subcontractor under the Subcontract, where required. The LLNS Technical Representative will issue all technical direction in writing.
- C. The LLNS Technical Representative is not authorized to issue any technical direction which would (1) constitute an assignment of work outside the general scope of the work covered by this Subcontract; (2) change the description of the work to be performed or any applicable drawings, designs, and specifications; (3) change the time or place of performance; the method of shipment or packaging, or the place of inspection, delivery or acceptance; (4) increase the estimated cost for performance of the work or the time required for performance of the work; (5) change any expressed term or condition of the Subcontract; or (6) unreasonably interfere with the Subcontractor's ability to perform and complete the work. Any such change must first be authorized by a written modification to this Subcontract issued by the LLNS Contract Administrator.

ARTICLE 9 – REPORTS

- A. Type of Reports

The Subcontractor shall prepare and submit reports as described in the SOW.

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B. Distribution of Reports

The Subcontractor shall distribute reports electronically to the LLNS Technical Representative at the following email address.

seager1@llnl.gov

With the exception of an authorized representative of DOE/NNSA and those indicated above, the Subcontractor shall not distribute reports of work under this Subcontract to any individual or organization without the prior written approval of the LLNS Contract Administrator.

C. Interim Reports

It is understood that there will be other information exchanged between the parties from time to time. The data may be exchanged directly between the parties concerned; formal reporting and distribution is not required in these cases.

ARTICLE 10 – PROPERTY

- A. The Subcontractor shall acquire, and/or LLNS will furnish to the Subcontractor, the materials, equipment, supplies, and/or tangible personal property items identified below, for use under this Subcontract:

Subcontractor Acquired Property

None.

LLNS Furnished Government Property

None.

- B. All property acquired by the Subcontractor and/or furnished by LLNS shall be identified, utilized, accounted for, and dispositioned in accordance with the clause of the GENERAL PROVISIONS entitled *GOVERNMENT PROPERTY*. Disposition directions and authorization will be provided by the LLNS Contract Administrator or a LLNS Property Representative.
- C. All property acquired by the Subcontractor or furnished by LLNS under this Subcontract shall be used only for performing this Subcontract and shall not be utilized after the completion, expiration or termination of this Subcontract, for any reason, unless otherwise provided in this Subcontract or approved by the LLNS Contract Administrator or a LLNS Property Representative.

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ARTICLE 11 – APPROVAL OF TECHNICAL DATA

If this Subcontract requires the Subcontractor to furnish any drawings, specifications, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance or test data, or other technical data for approval by LLNS prior to Subcontractor performance, the approval of the data by LLNS shall not relieve the Subcontractor from responsibility for any errors or omissions in such data or from responsibility for complying with the requirements of this Subcontract, except as specified below. Any work done prior to such approval shall be at the Subcontractor's risk.

If the data includes any variations from the Subcontract requirements, the Subcontractor shall describe such variations in writing at the time of submission of the data. If LLNS approves any such variation(s), a change order to the Subcontract shall be issued by LLNS and, if appropriate, a bilateral modification to the Subcontract shall be negotiated.

ARTICLE 12 – ACCESS TO LLNL COMPUTER RESOURCES

- A. The performance of this Subcontract may require Subcontractor personnel (including lower-tier subcontractor personnel) to use or connect with LLNL computer resources (i.e., computers or computer networks). Any such access and use shall comply with Department of Energy Acquisition Regulation (DEAR) 952.204-77, *Computer Security* (AUG 2006) which is hereby incorporated by reference into this Subcontract; and shall be in accordance with and subject to LLNL Cyber Security Program (LLNL CSP) requirements, including the following:
1. Approval to access specific LLNL computer resources shall be obtained from the appropriate LLNL Information Systems Security Officer (ISSO), through the LLNS Technical Representative.
 2. Access to LLNL computer resources by Subcontractor personnel is only permitted as required to perform the work authorized under this Subcontract. Classified computer resources or information shall not be accessed or attempted to be accessed without specific written authorization from the LLNL CSP. Personal and non-work-related use of LLNL computer resources by Subcontractor personnel is prohibited.
 3. Only Subcontractor personnel who are U.S. citizens may access or use LLNL computer resources, unless specific written authorization is granted for each non-U.S. citizen by the LLNL CSP.
 4. Only the approved Open Terminal Server (OTS) modem pool method shall be used to access unclassified LLNL resources via modems. All unclassified computer systems with modems other than facsimile machines must be configured with auto-answer turned off. Modems are prohibited on classified systems.
 5. All software used by Subcontractor personnel on LLNL computer resources must be appropriately acquired and used according to the applicable licensing agreements.
 6. All information or data furnished by LLNS or obtained from or developed on a LLNL

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computer resource by Subcontractor personnel shall be treated as confidential and protected by the Subcontractor to prevent disclosure to any persons other than those authorized by LLNS.

7. Computer passwords used by Subcontractor personnel for LLNL computer resources shall comply with the applicable rules and be protected to prevent disclosure to other persons. If a computer password is disclosed, or disclosure is suspected, the Subcontractor shall immediately notify the LLNS Technical Representative and arrange for replacement of the password.
 8. The use at the LLNL of any non-LLNL computing or video conferencing equipment with electronic data transfer capabilities (e.g., personal computers, including portables, laptops, electronic notebooks, personal digital assistants, and handhelds) may not be connected to or used to communicate with any LLNL computer resources without the written approval of the LLNS Technical Representative and the LLNL CSP.
- B. These requirements shall be applicable whether such access is at the LLNL, at the Subcontractor's facility, or elsewhere; and shall be applicable to lower-tier subcontractors and their personnel whose work requires access to LLNL computer resources. The Subcontractor shall report any suspected or actual computer security incident as soon as possible to the appropriate ISSO or, if the ISSO is not available, then directly to the LLNL CSP.
- C. LLNS may monitor the use of LLNL computer resources by network operating software, reviewing the contents of all LLNL computer resources and any computers used to access LLNL computer resources, and other appropriate means.
- D. If the Subcontractor does not comply with the provisions of this article, LLNS may withdraw the Subcontractor's access to LLNL computer resources. Misuse of LLNL computer resources may be a violation of law and could result in appropriate action, including termination for default and/or criminal prosecution.

ARTICLE 13 - DEBARMENT ELIGIBILITY CERTIFICATION

By acceptance of this Subcontract, the Subcontractor certifies, to the best of its knowledge and belief, it and its principals are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts (including subcontracts) by any agency of the Federal Government.

ARTICLE 14 - EXPORT CONTROL REQUIREMENTS

- A. The research and development work performed under this Subcontract is subject to export control under applicable U.S. laws and regulations. The Subcontractor shall ensure it is not exported under this Subcontract.
- B. An export, under U.S. export control laws and regulations, is any:

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1. Shipment, transfer, or transmission out of the United States, by any means (including hand-carrying), of any commodity (equipment, hardware, or materiel) technology (technical data, information, or assistance), or software (commercial as well as custom).
2. Transfer to any person or entity of a commodity, technology, or software, by physical, electronic, oral, or visual means, with the knowledge or intent the item(s) will be shipped, transferred, or transmitted to a non-U.S. entity or individual.
3. Disclosure of technical data or information to a foreign entity or individual, by any means, inside or outside of the United States. This includes interactions with foreign persons visiting or on assignment to LLNL or while LLNS personnel are on foreign travel.
4. Transfer of a commodity, technology, or software, by any means, to a foreign embassy or affiliate.

ARTICLE 15 – GENERAL PROVISIONS

- A. The clauses incorporated by reference in the attached GENERAL PROVISIONS shall be applicable to this Subcontract based on the value of the Subcontract, the status of the Subcontractor, and the nature and location of the work as indicated in the GENERAL PROVISIONS. As used therein, the term “Seller” shall mean “Subcontractor,” and the terms “Purchase Order” and “PO” shall mean “Subcontract.”
- B. This Subcontract is for the conduct of research, development, or demonstration (RD&D) work, or design work involving non-standard types of construction. Accordingly, the clauses listed in the GENERAL PROVISIONS related to such work shall apply. The applicable Patent Rights clause of the GENERAL PROVISIONS shall be the clause entitled *(for small businesses) PATENT RIGHTS-RETENTION BY THE CONTRACTOR OR (for large businesses) PATENT RIGHTS-ACQUISITION BY THE GOVERNMENT.*
- C. This Subcontract shall not involve access to or the generation of classified information or access to “limited” or “exclusion” security areas. Accordingly, the clauses listed in the GENERAL PROVISIONS related to such work shall not apply.

(END OF SCHEDULE OF ARTICLES)

Deleted: D. By this reference, the following clauses are hereby added to the *CLAUSES INCORPORATED BY REFERENCE* clause of the GENERAL PROVISIONS.¶

¶ FAR 52.230-2 Cost Accounting Standards (APR 1998), excluding Paragraph (b). Applies if the Subcontractor is subject to full CAS-coverage per 48 CFR Chapter 99, Subpart 9903.201-2 (FAR Appendix B).¶

¶ FAR 52.230-3 Disclosure and Consistency of Cost Accounting Practices (APR 1998). Applies if the Subcontractor is eligible for and elects to use modified CAS-coverage per 48 CFR Chapter 99, Subpart 9903.201-2 (FAR Appendix B).¶

¶ FAR 52.230-6 Administration of Cost Accounting Standards (MAR 2008)¶

¶ E. Reference is made to the *COST ACCOUNTING STANDARDS* clause of these GENERAL PROVISIONS. Notwithstanding the provisions of that clause or of any other provision of this Subcontract, the Subcontractor shall be liable to the U.S. Government for any increased costs, or interest thereon, resulting from any failure of the Subcontractor, with respect to activities carried on at the site of the work, or of a subcontractor, to comply with applicable cost accounting standards or to follow any practices disclosed pursuant to the requirements of such clause.¶