

STATEMENT OF CONSIDERATIONS

CLASS WAIVER OF THE GOVERNMENT'S DOMESTIC AND FOREIGN PATENT RIGHTS AND COPYRIGHTS UNDER DOMESTIC FIRST AND SECOND-TIER SUBCONTRACTS, ISSUED BY OAK RIDGE NATIONAL LABORATORY (ORNL) UNDER DOE PRIME CONTRACT NO. DE-AC05-00OR22725 FOR OAK RIDGE LEADERSHIP COMPUTING FACILITY UPGRADE PROJECT (OLCF-6)

WAIVER NO. W(C) 2024-004

The U.S. Department of Energy (DOE) Office of Science (SC) mission is to deliver scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the United States (U.S.). DOE SC is the nation's largest federal sponsor of basic research in the physical sciences and the lead federal agency supporting fundamental scientific research for our nation's energy future. DOE's mission to advance our nation's economic security through transformative science and technology solutions encompasses U.S. leadership in computational and data science critical to U.S. economic strength, driving the development of new technologies, and sustaining a world-leading workforce in advanced technology.

To this end, the U.S., DOE, and SC have been leaders in High Performance Computing (HPC) and computational science for decades, especially at the very high end of Leadership Computing, that pushes forward the frontiers of computing technology. Leadership computing capabilities are critical to DOE's basic and applied research programs because they provide researchers with the computational environment to explore natural and engineered systems that are too large, too complex, too dangerous, too small, or too fleeting to explore experimentally. Maintaining U.S. leadership in computational science requires deployment of state-of-the-art computational infrastructure with a relatively short lifespan that requires upgrade every four to six years.

The Advanced Scientific Computing Research (ASCR) program in the Office of Science currently manages the Leadership Computing Facility (LCF) with two designated sites: the Oak Ridge Leadership Computing Facility (OLCF) at Oak Ridge National Laboratory (ORNL), and the Argonne Leadership Computing Facility (ALCF) at Argonne National Laboratory (ANL) to provide architectural diversity, risk mitigation, and a balanced deployment timeline that delivers agility around vendor technology offerings. On behalf of the ASCR program, ORNL anticipates awarding two subcontracts (fixed price and nonrecurring engineering [NRE], if needed) to upgrade to next generation computing system for the OLCF (OLCF-6).

The mission of OLCF (and ALCF) is to:

- Enable high-impact, grand-challenge science and engineering that cannot be performed without access to leadership-class resources; and
- Procure and operate powerful computing and data resources that are among the most advanced in the world based on scientific community requirements.

The OLCF fulfills this mission by providing access to these leadership class resources on a competitive, merit-review basis to researchers in U.S. industry, institutions of higher education, National Laboratories, and other federal agencies. Today, OLCF, currently represented by Frontier, provides diverse computational platforms for the nation's largest scale simulations, data-intensive science, and artificial intelligence (AI) applications to enable the DOE scientific mission across a wide range of disciplines up to exascale speeds and capabilities. These capabilities expand the boundaries of science across many

DOE mission priorities, which include discovering new energy solutions needed for a sustainable future, rapidly responding to national emergencies and priorities, and extending our knowledge of the natural world through scientific inquiry.

Highly competitive user allocation programs such as Innovative and Novel Computational Impact on Theory and Experiment (INCITE) and ASCR Leadership Computing Challenge (ALCC) were created to ensure the most important and timely computational challenges are chosen for the LCF each year. As a result of these programs, LCF users publish hundreds of research papers every year – many in high impact publications, a competitive edge for U.S. companies, and thousands of students gain critical skills needed across the advanced computing ecosystem. In addition, the technology gains driven by the LCF deployments have fundamentally advanced the use of computing accelerators such as Graphics Processing Units (GPU) to broader societal benefit. Associated breakthroughs in AI science and technology at the LCF, and joint research and development (R&D) with vendors, have pushed the boundaries of computing operations per watt.

The U.S. Government has taken aggressive steps forward recently to reassert the strategic necessity of U.S. leadership in advanced computing through new policies and laws. At the same time, the U.S. is experiencing significant changes in the domestic HPC industry. The technology gains driven by the LCF deployments have fundamentally advanced GPU computing globally, with associated breakthroughs in AI and energy efficiency. Leadership resources enable AI applications to be trained with unprecedented speed and precision when coupled with the high quality, curated data generated by SC programs and user facilities through an Integrated Research Infrastructure. Continuing to address these DOE mission challenges requires Leadership Computing resources five to ten times more advanced than Frontier, including the ability to solve more complex problems, such as those with more physics or requirements for higher fidelity.

The OLCF Frontier computer system will reach its end-of-life in the CY 2026-2027 timeframe. The OLCF-6 will deploy advanced computing ecosystems as the successor to Frontier. The fast-growing need for advanced data integration technologies will drive new considerations in enhancements and upgrades to these facilities. Upgrading the data system earlier will ensure data needs are addressed early on and are transitioned smoothly from the previous systems.

ORNL expects to award a new system contract by CY 2024 with performance through CY2033. As with prior HPC systems, it may be necessary to accelerate key NRE (also known as research & development) as part of the ORNL acquisition to advance technology development, improve capabilities, improve application performance, and lower the total cost of ownership of the delivered system.

It is estimated that the total purchase price of the OLCF-6 system is \$500M. This cost is dependent on many variables, including high or low end scenario, technology readiness, competitiveness of U.S. vendors, supply chain volatility, HPC market share, and ability to reuse current infrastructure.

The Allocation of Patent Rights

Any small business or non-profit organization will retain the patent rights to its subject inventions under the Bayh-Dole Act, codified at 35 U.S.C. §§ 200-212. Such subcontracts will contain the standard clause DEAR 952.227-11, *Patent Rights-Retention by the Contractor*.

For non-Bayh-Dole subcontractors, the Government retains title to subcontractor's subject inventions as set forth in the clause DEAR 952.227-13, *Patent Rights-Acquisition by the Government*. However, a subcontractor that agrees to cost share by an amount of **at least 40% of the total cost of the subcontract shall qualify for this Class Waiver** where DOE agrees to waive in advance, patent

rights to the subcontractor such that it may elect its subject inventions. This patent rights waiver is subject to a retained government-use license, march-in rights, reporting requirements, DOE approval of assignments, 35 U.S.C. § 204, a U.S. Competitiveness provision (paragraph (t)), and other terms set forth in the *Patent Rights-- Waiver* clause in Appendix A, which will replace the 952.227-13 clause in all qualified subcontracts.

The Allocation of Rights in Computer Software

The Bayh-Dole Act only applies to the allocation of patent rights. However, many subcontractors prefer to have advance rights in data developed under their subcontracts, specifically rights in computer software. Therefore, this Class Waiver also allows a domestic subcontractor (small business, non-profit or for-profit organization) to assert copyright in computer software without the Contracting Officer's prior approval. Under the subject award, DOE agrees, in advance, to authorize the subcontractor to assert copyright, without the Contracting Officer's prior approval, in software produced under the subcontract by its employees. The right to assert copyright in OLCF-6 software is subject to a limited government-use license to allow the subcontractor sufficient opportunity to commercialize the software.

Via the limited government-use license, the Government reserves, for itself and others acting on its behalf, a paid-up nonexclusive, irrevocable worldwide license in the computer software to reproduce, prepare derivative works, and perform publicly and display publicly (but not to distribute to the public) by or on behalf of the Government. Furthermore, the limited government-use license in copyrighted software will expand to a broad Government license (which allows the Government to distribute copies to the public) if either the subcontractor abandons efforts to commercialize the software or DOE exercises its march-in rights when, for example, the subcontractor has not taken effective steps to commercialize the software. Separately, the broad Government license will also apply to whatever OLCF-6 software the subcontractor releases under an Open Source Software (OSS) license.

Notwithstanding the above approval to assert copyright in computer software, a subcontractor delivering software under an OLCF-6 subcontract shall comply with the requirements of the subcontract governing copyright and rights in data, including the standard policies and practices regarding submission to DOE's Office of Science and Technical Information (OSTI) via its DOE CODE platform. ORNL's treatment of delivered software shall be governed by the applicable terms of its prime contract. Therefore, ORNL should consult with ASCR (and with DOE Patent Counsel's concurrence) to determine which software developed under specific subcontracts should be (a) delivered to ORNL and/or (b) required by the subcontract to be distributed under an OSS license.

DOE believes that the above approach for allocating rights in OLCF-6 computer software is warranted in order to stimulate the development of end products for future purchase. The proposed subcontract language for these data rights is also attached in Appendix A.

Foreign Subcontracts

The provisions of this Class Waiver do not automatically apply to any foreign-owned or foreign-controlled subcontractors at any tier. However, ORNL should consult with ASCR to determine whether DOE should grant a foreign subcontractor this waiver's disposition of rights or require the foreign subcontractor to submit a separate waiver petition to be approved by DOE's Assistant General Counsel for Technology Transfer and Intellectual Property.

Conclusion

This Class Waiver and the terms of the intellectual property clauses included within the subject subcontracts are meant to cover only the scope of the work under the OLCF-6 procurements for ORNL and shall not serve as precedent for any follow-on work to be negotiated separately with the selected subcontractors. This Class Waiver shall apply to domestic second-tier subcontracts that a first-tier subcontractor issues but shall not apply to foreign-owned or foreign-controlled subcontractors except as provided above.

DOE Patent Counsel will qualify each subcontractor upon written certification by ORNL that this Class Waiver is applicable. Such certification will include verification of the minimum percentage cost share by the subcontractor, a determination that the subcontractor is a U.S. company, a review of the subcontractor's foreign ownership and control, and verification of the acceptance of the terms and conditions of the subcontract.

If any company does not qualify for this Class Waiver or is not satisfied with the terms and conditions of the subcontract necessary to qualify for this Waiver, then that company may separately petition DOE for its own Advance Waiver.

For the foregoing reasons, and in view of the objectives and considerations set forth in 10 CFR Part 784, it is recommended that the requested waiver be granted for domestic first-tier and second-tier subcontracts issued under the OLCF-6 procurement.

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Emily G. Schneider
Deputy Chief Counsel for Intellectual Property
DOE Oak Ridge Office of Chief Counsel
GC-South

Based upon the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by a waiver of the United States and foreign patent rights, and, therefore, the waiver is granted. This waiver shall not affect any waiver previously granted.

CONCURRENCE:

APPROVAL:



Ceren Susut
Associate Director
Office of Advanced Scientific Computing
Research
Office of Science, DOE

Date: _____



Brian Lally
Assistant General Counsel for Technology
Transfer and Intellectual Property
DOE Office of General Counsel

Date: _____