

STATEMENT OF CONSIDERATIONS

REQUEST BY IBM FOR AN ADVANCE WAIVER OF THE GOVERNMENT'S DOMESTIC AND FOREIGN PATENT AND COPYRIGHT RIGHTS UNDER A SUBCONTACT ISSUED BY LAWRENCE LIVERMORE NATIONAL LABORATORY; DOE WAIVER NO. W(A)-02-023; SAN 693

The Petitioner, International Business Machines Corporation (IBM), has requested an Advance Waiver of the Government's domestic and foreign rights to inventions in the above cited research and development subcontract (IBM Subcontract). See Appendix A- IBM's Petition, Petition Answer 1. In addition, IBM would like to assert copyright in computer software and delay the immediate release of unpublished technical data. Finally, the standard DOE clause for U.S. Competitiveness will be modified.

The Development of the ASC Technology

Lawrence Livermore National Laboratory (LLNL), Los Alamos National Laboratory (LANL) and Sandia National Laboratories (SNL) (jointly referred to as the Laboratories) are working on the Accelerated Strategic Computing (ASC) program to develop supercomputers for DOE programmatic needs. To meet the requirements of DOE's Stockpile Stewardship and Management Program, DOE is enhancing its computational power by developing supercomputers with the capability of performing tera-scale computing. The ultimate goal is to have supercomputers capable of performing three-dimensional modeling and nuclear weapons relevant simulations. With these new capabilities, scientists can analyze and predict the performance, safety, and reliability of nuclear weapons and certify their functionality.

The ASCI Purple is a collaborative Laboratory procurement to establish the fifth generation ASCI computing platform. ASCI Purple targets 60 teraFLOP/s, 30 TiB memory and 1.2 PB of SAN-based storage for delivery to LLNL in FY 2004. This High Performance Computer (HPC) will have a peak plus sustained performance capability of 100 trillion floating point operations per second (TeraOPS). This performance level is more than twice as fast as any HPC in existence today. IBM intends to achieve the objectives by (a) accelerating, at its own expense, currently planned development of IBM standard commercial products and (b) enhancing and accelerating, at the Government's expense, certain other IBM standard commercial products, principally software. See Appendix A- IBM's Petition, Answer #15. Given that IBM's performance under the ASCI Purple Project will affect core IBM technologies developed through years of IBM research and innovation, IBM will not participate in this program without retaining title to the intellectual property it creates. See Appendix A- IBM's Petition, Answer #15.

The Allocation of Patent Rights

IBM has requested the worldwide rights in all inventions under this IBM Subcontract. Usually, DOE expects the Subcontractor to cost-share the subcontract by at least 20% before granting an advance waiver. However, DOE may grant a waiver when the subcontract supports the

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Government's military related projects such as the Stockpile Stewardship and Management Program. IBM was selected using the Best Value Source Selection method. Unlike the other proposals received by LLNL, IBM's proposal was based on upgrading current technology by demonstrating improvements on software and hardware that already exists. In addition, the final cost was similar to the other proposals and IBM has met delivery requirements on previous contracts. Therefore, LLNL and DOE will be purchasing a unique computer that will meet the Government's needs, which IBM's competitors could not provide. In ASC Purple, IBM will be investing several hundred million dollars in IBM funds over the next 2-3 years to develop the technology needed to meet the delivery dates of this subcontract. See Appendix A, IBM Petition, Answer #3. The Government's initial investment of \$24 million for this subcontract is to support the enhancement and acceleration of certain IBM standard commercial products, principally software, that pertain directly to the requirements of the Government. In addition, IBM has an extensive portfolio of patents directly related to this technology. See Appendix A, IBM Petition, Answers #5, 7 and 8. From the list, it is clear the IBM protects as much of its technology as possible and does not want to lose control of key components that may be developed under this subcontract. After IBM demonstrates that a computer meeting the LLNL specifications can be achieved, the remaining portion of the subcontract funds (approximately \$200 million) will purchase the computer for LLNL.

IBM has agreed to the standard patent clause (10 CFR 784), which allows the Government to retain a nonexclusive, nontransferable, irrevocable, paid-up license to practice or to have practiced for or on the behalf of the Government the subject inventions throughout the world. Therefore, the Government will be able to use the inventions for non-commercial purposes.

DOE routinely requires the inclusion of a U.S. Competitiveness clause to benefit the U.S. economy. IBM could only agree to the standard DOE clause by using exceptional and expensive monitoring procedures. IBM now employs many of its inventions in various parts of its large and very diverse product line simultaneously, in manufacturing plants throughout the world. IBM does not readily have an effective means of monitoring the use of its inventions to ensure compliance with such a provision. In addition, it is expected that any inventions will relate principally to software. Therefore, the "manufacture" of the software would be the duplication of the programs on discs or other media. Thus, the benefit to the U.S. economy of performing this duplication in the U.S. is insignificant. Therefore, IBM and DOE Program negotiated the attached U.S. Competitiveness clause. See Appendix B—U.S. Competitiveness Clause. The U.S. economy will benefit with the significant enhancements to both the U.S. technology and U.S. skill base. See Appendix A- IBM's Petition, Answer 15, section 4. IBM is committed to conduct research and development activities in U.S.-based facilities. Also, IBM will

commercially implement any processes and services, or improvements thereof, which are patented in the U.S.

The Allocation of Rights in Computer Software

IBM has requested the rights to assert copyright in computer software without the Contracting Officer's prior approval. In the commercialization phase of this project, most of the software would be derivative works of existing software of IBM's standard commercial products. Therefore, the Government's ability to effectively license this derivative work to third parties is limited. In addition, the right to assert copyright in software is subject to a limited government-use license for a period of five years (and any extensions granted—see next paragraph) to allow IBM sufficient time to commercialize the computer software. In the limited government-use license, IBM grants to the U.S. Government and others acting in its behalf, a paid-up nonexclusive, irrevocable worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the U.S. Government. See Appendix C, Rights in Data Modifications, paragraph (c)(1), second subparagraph. However, the limited government-use license in copyrighted software will revert to a broad U.S. Government license, which allows the U.S. Government to distribute copies to the public, if the five year period has expired or if DOE march-in rights are exercised, for example, where IBM has not taken effective steps to commercialize the software. See Appendix C, Rights in Data Modifications, paragraph (d)(5).

In addition, IBM may extend the initial five year period (where the Government retains a narrow government-use license) for an additional five years. When requesting this extension, IBM will supply information to DOE regarding IBM's commercialization activities utilizing the computer software. This extension will allow IBM to commercialize the software for the projected life of the products incorporating the derivative works. DOE will grant the Subcontractor's request if the Subcontractor demonstrates to the satisfaction of DOE that the Subcontractor has commercialized, or is making reasonable progress in commercializing, the computer software.

IBM also requested a statement that computer software first produced in the performance of subcontract shall include first-produced technical data necessary for developing, testing and operating such computer software. DOE agreed to this statement that ties the production of the software and the closely related technical data under the software license provisions. This will not affect the dissemination of scientific data that may be developed under this subcontract.

It is typically required that when software is created under a subcontract, the Subcontractor will deliver a copy of the software to DOE's Energy Science and Technology Software Center

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(ESTSC). This is very important if the software is being developed directly for the Government and several Government facilities or Agencies may find the software to be useful. However, IBM will be creating derivative software based on their proprietary software for this project. Therefore, IBM does not want to deliver their Restricted Computer Software to ESTSC. The derivative software would be useless without IBM's proprietary code. This IBM Subcontract is expected to result in the purchase by LLNL of a supercomputer that will contain a software package, i.e. Restricted Computer Software and derivative software from this project. Therefore, DOE agrees that IBM's first produced software that is imbedded, i.e. already loaded in the supercomputer, in conjunction with the computer system does not need to be also delivered to ESTSC. However, IBM agrees to send a copy to ESTSC for any software (created under this subcontract) that is a stand alone item.

The Government usually reserves the right to grant a nonexclusive, partially exclusive or exclusive software license to a third party if the Subcontractor has failed to commercialize the software. However, DOE is agreeing to only grant nonexclusive licenses in such cases. It is expected that the derivative software developed under this subcontract would be impossible to implement for other fields of uses without the involvement of IBM. The software developed under this subcontract will be directly connected to IBM's standard commercial products. Therefore, the third party would have to seek a license for these standard products before using the derivative software. It is expected that IBM will be incorporating this software into their products such that DOE will never exercise this option. See Appendix A- IBM's Petition, Answer #15, section 3.

The Delayed Release of Unpublished Data

IBM has requested that the U.S. Government agree to delay the release to the public of Other Data, which is data produced in the performance of the subcontract that is neither computer software nor published data. The Subcontractor grants to the Government and others acting in its behalf, a paid-up nonexclusive license in the Other Data for a period of five years. See Appendix C, Rights in Data Modifications, paragraph (c)(1), subparagraph 4. DOE's policy is to publicly release technical data that is funded by the U.S. Government. This policy promotes both the commercialization of the technology and the further development of knowledge in the academic/research community. However, IBM would be reluctant to enter into this subcontract if its competitors could have immediate access to the technology. DOE Program supports IBM's position that the release of this technical data should be delayed in order to allow IBM the opportunity for a competitive advantage to commercialize this technology. See Appendix A- IBM's Petition, Answer 10. In the alternative, DOE could limit the data delivered to LLNL and DOE; however, LLNL needs to receive all the pertinent data necessary to carry out the objectives

of the Government's program. There are several exceptions where DOE may release the data, for example, when responding to a request under the Freedom of Information Act (FOIA). See Appendix C, Rights in Data Modifications, paragraph (d)(4) for a full list of exceptions.

Additional Data Rights Provision

DOE Program is reluctant to delete the Additional Data Rights clause (FAR 52.227-16) because data that was not contemplated at the time of execution of the subcontract may be needed when delivery of the computer occurs. This clause would allow DOE Program to receive this additional data. As an alternative to deleting this clause, IBM has requested to limit this clause to apply only to first-produced technical data necessary for developing, testing and operating any first-produced software under the subcontract. In paragraph (b) of the clause, the Subcontractor does not have to deliver any "data which are specifically identified in this subcontract as not subject to the clause." Therefore, IBM requested that the limitation to this clause be inserted into the subcontract before execution. It is expected that most of the technical data developed under this subcontract will be software and software related data. Therefore, the Government would retain the right to require the delivery of any additional data relating to the software. However, the Government could not obtain additional data in other fields such as the computer hardware that may relate to the software, but was not developed under this subcontract. Also, the interests of IBM are protected because this additional data delivered would be covered by the software license and not part of Other Data, which is subject to FOIA.

The Blue Light Subcontract Issued by LLNL

In 2001, LLNL and IBM executed a contract for research and development to attain a peak 180+ teraOPS ultracomputer. The Blue Light project consists of two phases: (a) the R&D effort involving an aggressive chip test program along with software/hardware development; and (b) delivery of prototypes to satisfy DOE programmatic requirements. IBM petitioned for an Advance Waiver (W(A)-01-018), which was granted on October 16, 2001. As part of this ASC Purple, DOE program may be including an extension of the Blue Light subcontract for specific prototypes. Therefore, the Blue Light Advance Waiver will apply to these extensions under the ASC Purple subcontract.

Second Tier Subcontracts

IBM may be using subcontractors (second tier) to assist in completing the goals of ASC Purple. Many of these second-tier subcontracts are standard subcontracts currently working with IBM on various projects. Therefore, IBM may assign some of these second-tier subcontractors to perform tasks associated with ASC Purple. If the second-tier subcontractor is a for-profit domestic entity, then all of the terms of this Advance Waiver shall apply to the second-tier

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domestic subcontracts that IBM has issued or may issue. Therefore, the second-tier subcontractor may elect title to its inventions. If the second-tier subcontractor is a non-profit or small business domestic entity, then the FAR provision (FAR 52.227-11) shall apply such that the second-tier subcontractor may elect title to its inventions. If IBM issues or has issued a subcontract to a foreign entity to perform tasks under ASC Purple, this Advance Waiver does not apply; however, that foreign subcontractor may apply for an Advance Waiver of its own.

Conclusion

Accordingly, in view of the statutory purposes of DOE waiver policy, and the objectives of the Accelerated Strategic Computing program, and in view of the factors to be considered under DOE's statutory patent waiver policy, all of which have been considered, it is determined that this advance waiver will best serve the interest of the United States and the general public. It is therefore recommended that this waiver be granted.



Date: Oct. 10, 2002

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U.S. Competitiveness Provision for ASCI Purple

The Contractor plans to conduct research and development activities within the scope of this Contract substantially in U.S.-based facilities. "Substantially" is defined as greater than a fifty percent level of effort. Any processes and services, or improvements thereof, which knowingly embody any waived invention developed under this Contract on which the Contractor receives a U.S. patent shall, during the term of such patent, be commercially implemented in the U.S. at the same time or before they are commercially implemented outside the U.S. For purposes of the prior sentence, "commercially implemented" shall mean offered for sale in generally available products or offered for patent licensing.