



June 12, 2000

The Honorable Ted Stevens  
Chairman  
Subcommittee on Defense  
Committee on Appropriations  
United States Senate  
Washington, DC 20510

The Honorable Daniel K. Inouye  
Ranking Minority Member  
Subcommittee on Defense  
Committee on Appropriations  
United States Senate  
Washington, DC 20510

Dear Chairman Stevens and Ranking Member Inouye:

I am writing to urge you to restore funding cuts made in DARPA's information technology research programs when the FY 2001 defense appropriations bill (S. 2593) is considered in conference. As it stands now, the bill would cut \$35 million from the Computing Systems and Communications Technology line-item and \$15 million from the Extensible Information Systems line-item. These amounts, modest in the context of the entire Department of Defense budget, are nonetheless critical to the DOD's efforts to take advantage of the tremendous opportunities for information technology to enhance the national security of the United States.

You and the members of your subcommittee are to be commended for your commitment to maintain strong support for defense research. The treatment afforded DARPA's computing, information, and communications research programs in this year's bill is thus all the more perplexing. While the DOD's overall IT budget is growing, the DARPA programs in question represent the DOD's investment in *long-term, high-payoff* research to push the frontiers of IT in ways most likely to benefit the national defense. It would be shortsighted to curtail fundamental research programs in an effort to curb the overall IT budget. If we are to achieve national security objectives that depend so heavily on information superiority, the DOD *must remain on the leading edge* of information technology.

In fact, we're already in a less than optimal situation with regard to long-term IT research, as the President's Information Technology Advisory Committee recently demonstrated. The PITAC, an independent, Congressionally chartered panel of IT experts, concluded after careful study that *the federal investment in information technology R&D is inadequate and too focused on near-term problems*. The DOD requested funding increases for DARPA's IT research programs to redress these deficiencies as they pertain to defense IT R&D.

The pending budget cuts would impair research programs that generate powerful new capabilities and spectacular improvements in the reliability, usability, and cost-effectiveness of virtually every defense system, right down to the devices used by warfighters in the field. Embedded software, for instance, is a critical factor in the superiority of U.S. defense technologies, from avionics systems to precision-strike weapons. However, current-generation embedded software technologies are extremely hard to build, making them a leading cause of time and cost overruns in development programs. The profound technical challenges inherent in these technologies are unlikely to be overcome without a robust investment from DARPA.

The budget cuts would also curtail research on multimodal and speech interfaces that provide the means for "hands free" access to information system control in battle situations, enabling defense forces to maintain information superiority at the battlefield level. Research on survivability and network-centric warfare that would enable construction and continued operation of distributed information processing systems in the face of attacks, both physical and via software, would also be affected.

As is the case throughout society and the economy, the information revolution is transforming every aspect of the U.S. defense. Information technologies are increasingly important as the means of obtaining military advantage over our adversaries without having to expand the force structure. They have enabled DOD to deploy and sustain forces much farther and more quickly than ever before. But they also present new challenges, such as those you are familiar with in information assurance and high performance computing modernization. Rapid advances in defense-related IT are critical to meeting these challenges and our strategic objectives in information superiority. DARPA's role as a preeminent innovator in computing and communications must be strengthened to ensure that the information revolution is an advantage for and not a hindrance to the U.S. military and our national security.

To this end, please make every effort to fully fund the programs encompassed in the Computing Systems and Communications Technology and the Extensible Information Systems activities. Thank you for your attention to our concerns about DARPA's IT research programs. The Computing Research Association would be pleased to assist you in this matter and respond to any questions you might have.

Sincerely,

Edward Lazowska  
CRA Board Chair