

1997

TECHNOLOGY APPLICATIONS REPORT



**BALLISTIC MISSILE
DEFENSE ORGANIZATION**

FOREWORD

During the Cold War, there was much concern in the United States about the threat of ballistic missiles carrying weapons of mass destruction. To control this threat, the U.S. Department of Defense formed the Strategic Defense Initiative Organization (SDIO), a research program designed to look into defensive technologies and related systems that could destroy ballistic missiles and warheads in flight. Although the Soviet Union has collapsed and the Cold War is over, a growing number of hostile nations have invested heavily in ballistic missiles, prompting a change in U.S. defense policy. As a result of this change, SDIO became the Ballistic Missile Defense Organization (BMDO), which is now working to provide active defenses against ballistic missile attacks and to build a technical base that will support these defenses.

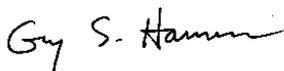
SDIO and BMDO have supported research on new technologies and provided options for improvement to existing systems. These new ideas—such as the kinetic energy interceptor, advanced tracking and surveillance sensors, and directed energy systems—are essential to strengthen our defenses and keep ahead of the increasingly sophisticated global missile threat. Investing in these and other missile defense systems also has provided enormous amounts of technology with many commercial applications outside their intended defense use. Leading-edge technology in lasers, optics, and computer algorithms, for example, may help doctors diagnose and treat cancer faster and more effectively, potentially saving many lives.

Recognizing the importance of transferring this technology to U.S. companies and its benefits to the U.S. economy, BMDO created the BMDO Technology Applications program. As its major thrust, this program facilitates the use of technology developed for BMDO in the non-defense public and private sectors, resulting in numerous technology transfers of leading-edge missile defense technology. For example, the program is establishing cooperative programs with industry to illustrate the uses of BMDO-funded communications, imaging, and computer technology in education. Applying new technologies to meet growing distance education needs could provide enormous benefits for rural and remote communities, in the United States and throughout the world.

The *1997 Technology Applications Report* highlights some of the most innovative and commercially oriented technology emerging from BMDO-funded research and development projects. What's more, many of these technologies are already finding homes in such myriad commercial markets as communications, displays, medicine, manufacturing, optics, and sensors—just to name a few. This report also discusses the program's integrated efforts to support BMDO-funded technologies at various stages of development through the following approaches:

- Making industry aware of BMDO-funded innovations.
- Guiding BMDO-funded researchers in the commercialization process.
- Leveraging cooperative relationships.
- Testing innovative, new models to commercialize BMDO-funded technology.

I invite you to sample the many BMDO-funded technologies featured in the report. And, as you read this publication, keep in mind that a staff of technology transfer specialists is only a phone call away at (703) 518-8800, ext. 500. They will be happy to answer any questions about a specific technology in this report or any other services of the Technology Applications program.



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