

July 7, 1998

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(SCIENCE, TECHNOLOGY AND ENGINEERING)
CHIEF OF NAVAL RESEARCH
DEPUTY ASSISTANT SECRETARY OF THE ARMY
(RESEARCH AND TECHNOLOGY)

SUBJECT: The Dual Use Science & Technology (DU S&T) Program

The DU S&T Program has two primary purposes. The first is to develop dual use technologies with industry. Second is the transfer of techniques developed during execution of prior dual use programs to the Services. This is the third year for the DU S&T Program which is transitioning to the Services for execution in Fiscal Year (FY) 1999.

Guidance for the execution of the DU S&T Program for FY 1999 is attached. Unlike previous years, projects will not have to be submitted to Office of the Secretary of Defense for approval. However, projects must still meet minimum requirements and be selected based on selection criteria contained in the guidance. In addition, a summary sheet, contained in the guidance, must be submitted to the Director, Defense Research and Engineering, prior to obligation of funds for a project. These summary sheets should be sent to Office of the Director, Defense Research and Engineering, ATTN: Dual Use Program Office, 5203 Leesburg Pike, Suite 1401, Falls Church, Virginia 22041.

As you are aware, it has been agreed to have a joint Broad Agency Announcement (BAA) for the DU S&T Program in FY 1999. This BAA will be the only source of new projects initiated under the DU S&T Program for FY 1999 and as such it is imperative that each Service give its full support to ensure its success. My point of contact for this action is Dan Petonito. He can be reached at 703-681-5451.

/s/

Hans Mark

Attachment



GUIDELINES
FOR
DUAL USE SCIENCE AND TECHNOLOGY PROGRAM
FISCAL YEAR 1999



June 1998

Fiscal Year 1999 Guidelines Dual Use Science & Technology Program

Program Overview

The increased use of dual use technologies is essential to reduce the costs and increase the performance and sustainability of defense systems. The Dual Use Science & Technology (DU S&T) Program was started in Fiscal Year 1997 to increase the use of dual use technologies in defense systems. The Initiative has two primary purposes. The first is the development of dual use technologies with industry. The second is to embed the concepts being developed under this program and earlier DARPA dual use programs in the Services and to make the development of dual use technologies with industry a normal way of doing business throughout the Department of Defense. This second goal is laying the groundwork for the transition of the Program to the Services in Fiscal Year 1999 which is the first year the Services will have their own dual use S&T program elements to execute.

The DU S&T Program jointly funds research projects with industry for the development of dual use technologies to solve specific technical problem(s). A dual use technology is defined as a technology that has both military utility and sufficient commercial potential to support a viable industrial base. By increasing the use of these technologies in defense systems, we can take advantage of the same competitive pressures and market-driven efficiencies that have led to accelerated development and savings in the commercial sector. The key is to identify where the Services and firms have mutual interests and can work together to develop technologies that meet both defense and commercial needs. This Program is accelerating this process by encouraging the implementation of dual use technology development projects in the Services.

This is the third year of the Program. In Fiscal Years 1997 and 1998, over 140 projects were approved and over \$130 million of DU S&T funds have been distributed to the Services. These funds, along with the Service and Industry cost share funds, have resulted in the investment of over \$500 million in development of dual use technologies.

Project Identification and Selection

During the past two years each Service issued individual Broad Agency Announcements (BAA) to solicit proposals from industry and to identify candidate DU S&T projects. These proposals were then sent to the Office of the Secretary of Defense (OSD) for review and approval. In Fiscal Year 1999 it is planned to have a single joint BAA and the proposals will not be sent to OSD for approval. The Navy has agreed to take the lead for the FY 99 joint BAA. The Navy point of contact for the joint BAA is Cathy Nodgaard who can be reached at either (703) 696-0289 or (703) 526-1930 or by e-mail at nodgaac@onr.navy.mil. This BAA will be the only source of new projects initiated under the DU S&T Program and as such, it is imperative that each Service support this joint BAA and meet the milestones contained in the following Schedule:

Special Service Requirements for BAA to Navy	Jul 15, 98
Services Provide Navy Preliminary Topic Areas for Joint BAA	Jul 31, 98
Navy Issues Two Step BAA	Aug 14, 98
Step 1 – White Papers - Due	Sep 29, 98
Step 2 – Industry Proposal – Due	Dec 15, 98
Anticipated Service Announcements of Awards	Feb 1, 99

Bidders’ Conferences – We will be holding bidders’ conferences in support of the Fiscal Year 1999 solicitation and Service support for these conferences will be needed.

Two Step BAA – The two step BAA will provide industry advanced notice of the topic areas and the opportunity to submit white papers to obtain feedback from the government on their proposed response to the solicitation. This advanced notice and feedback will allow industry to better prepare their proposals to address the needs of the Services.

Topic Areas – In last year’s report to Congress on the DU S&T Program we submitted planned focus areas for the Fiscal Year 1999 Program. These focus areas were submitted at the request of Congress and were identified by the Services. Topic areas included in the 1999 joint BAA must fit under one of these focus areas that are described in Tab A.

Minimum requirements and the selection criteria for DU S&T projects are identified below. Proposals selected by the Services to be funded under the DU S&T Program must meet these minimum requirements and must be selected using these selection criteria. The total funds in the DU S&T Program for each Service is expected to be approximately \$20 million. These funds should be obligated by June 30, 1999. Proposals selected should have reasonable expectation of meeting this obligation goal if the above schedule is maintained. While OSD approval for project selection is not required this year, it is required that a summary sheet be completed and provided to OSD prior to the funds being obligated on a project. The format for these summary sheets is at Tab B.

Minimum Requirements

Selected proposals should meet the following minimum requirements:

1. The proposal should be for the development of a dual use technology that will meet a military need and have sufficient potential commercial applications to support a viable production base.
2. At least half the cost of each proposed project’s statement of work (SOW) must be paid by non-federal participants, one of which must be a for-profit company. In addition, a minimum of 50% of the non-federal cost share must be in the form of high quality, as defined below. The remaining cost of the project will be shared by the sponsoring Service and the DU S&T Program. The DU S&T Program can contribute no more than 25% of the cost of the project. Both the source of industry’s cost share and the Service funds, by Program Element (PE), must be identified on the Summary Sheet.

3. Industry awards must be based on competitive procedures and based solely on merit.
4. Projects must be awarded using non-procurement agreements, i.e. Cooperative Agreements or “Other Transactions.” These vehicles provide a less burdensome and more creative arrangement between the government and industry and attract participation of commercial companies that do not normally participate in defense procurements.
5. The projects must result in the development of a technology, not the application of a technology. Prototypes of the technologies are encouraged. Examples of work not funded under DU S&T include market studies, technology roadmaps, strategic plans, state of the art surveys, etc.

Selection Criteria

The following criteria will be included in the joint solicitation for proposals and should be used to evaluate and prioritize proposals:

Technical & Management Approach - A proposal should score well if it has the following characteristics:

- Offers a superior, innovative, or unique solution to a military problem, challenge or need.
- Provides clear, quantifiable technical objectives and a technical approach with a schedule showing definite decision points and endpoints.
- Clearly lays out project risks and plans for dealing with them, including a statement of time-to-market considering available resources and the existing state-of-the-art.
- A project team that includes all the resources needed to successfully develop the technology and turn it into a product or process;
- A project team that is organized for efficient and effective execution of the project. There should be clear, complementary roles for all members and clear lines of responsibilities and authority in the management of tasks and cost control.

Military Benefit - Projects should focus on technologies that will have a major impact on the cost, performance or sustainability of defense systems. In general, technologies that will have the greatest impact on the Nation's defense as well as those that will have a pervasive impact across a range of defense systems will be rated higher. In addition, the proposal must include a strategy (specifically, the need and timing for planned system or upgrade) for incorporating the technology into a defense system(s).

Commercial Viability of Technology - An objective of the DU S&T Program is to obtain the economies of scale, accelerated product improvements, and increased sustainability inherent in the commercial marketplace for defense procurements. Thus, it is essential that a commercialization path for the proposed technology be identified and that potential commercial applications be sufficient to support a production base that would be

capable of meeting future defense requirements. To be avoided is a technology that would not be economically viable without significant military buys.

Quality of Cost Share - When evaluating the quality of the proposed cost share the primary focus must be on the risk being assumed by the for-profit members of the proposal team. Proposed cost share should be evaluated and identified as “High,” “Low,” or “Unacceptable” according to the three definitions below. The sum of high and low quality cost share must be at least 50% of the cost of the project’s SOW, of which at least 50% must be high quality. High quality cost share is preferred, and those proposals containing predominately high quality cost share should be ranked higher in this criterion than those containing a large percentage of low quality cost share.

High Quality Cost Share - These are financial resources that will be expended on the proposed project’s SOW and will be subject to the direction of the project management team. These are funds expended by the non-federal participants for man-hours, materials, new equipment (prorated if appropriate) and subcontractor efforts on the project’s SOW, and restocking of parts and material consumed. High quality cost share can include government-reimbursed IR&D funds, but only if those funds are offered by the proposers to be spent on the SOW and subject to the direction of the project management team.

Low Quality Cost Share - These are non-financial resources that will be expended on the proposed project’s SOW and will be subject to the direction of the project management team. This is typically wear-and-tear on in-place capital assets like machinery or the prorated value of space used for the project.

Unacceptable - This is a resource that either (1) will not be expended on the proposed project’s SOW; or (2) will not be subject to the direction of the management team as discussed above. Unacceptable cost share should be subtracted from the proposers claimed total cost for the project, and the required industry cost share recalculated. A non-exhaustive list of examples include:

- sunk costs, i.e., costs incurred before the start of the proposed project;
- foregone fees or profits;
- bid and proposal costs;
- value claimed for intellectual property or prior research;
- parallel research or investment, i.e., research or other investments that might be related to the proposed project, but which will not be part of the SOW or subject to the direction of the project management team. Typically these activities will be undertaken regardless of whether the proposed project proceeds.
- Off-Budget Resources - These are resources that will not be risked by the proposer on the SOW, and should not be considered when evaluating cost share.

Guidelines for Service Cost Share

Service cost share must be funds placed on the funding instrument to industry, expended on the proposed project's SOW, and subject to the direction of the project management team. These funds can be drawn from outyears (e.g. FY 00 or 01) but they must be identified by PE on the project summary sheet and must not be contingent on the success of the initial phase(s) of the project. If a project is selected for DU S&T funding, these Service funds must be committed to the project. As in the case of industry's cost share, sunk costs or parallel research will not be counted toward the Service's share of the project cost. Service funds for these projects should be drawn directly from Service appropriations and not from those of Defense agencies or other federal organizations.

The Fiscal Year 1998 Defense Authorization Act has established goals for the initiation of dual use projects for each of the military departments. The goals are based on obligations of 6.2 – Applied Research funds and start at 5% for Fiscal Year 1998 and climb to 15% for Fiscal year 2001. The Fiscal Year 1998 Authorization Act also requires that a report be sent to Congress describing the progress each military department is making in obtaining these goals. It is imperative to understand that **only** Service 6.2 – Applied Research funds can be used to meet these goals. While other funding can be used for Service matching funds it is recommended that to the maximum extent possible 6.2 – Applied Research funds be used. In addition, because this is an S&T program the use of other funds besides S&T (6.1 to 6.3) funds should be kept to a minimum.

Out of Scope Proposals

The DU S&T Program will not fund the following types of proposals:

Studies – The primary output of DU S&T funded research should be a new product or process technology, not paper. Types of studies not funded under DU S&T include market studies, technology roadmaps, strategic plans, state of the art surveys, etc.

Capitalization or Facilities – DU S&T projects should focus on the development of a militarily useful, commercially viable technology, not the capitalization of a factory or the building of a testing facility. DU S&T cannot pay for equipment not needed for project research.

Proxy or Fee-for-Service Organizations – DU S&T cannot fund the mere establishment or sustainment of organizations with an agenda of problems but no specific solutions. It also cannot fund the establishment of fee-for-service testing or technology transfer organizations.

DU S&T Program Office

The DU S&T Program Office is staffed with representatives from each Service who are available to assist you with your program development. The Service representatives have been instrumental in the execution of the DU S&T Program and have been involved in the development of the topic areas; evaluation of proposals; and execution of the Cooperative Agreements and “Other Transactions.” Assistance can be requested from the DU S&T Program Office by calling (703)-526-1930 or (703) 681-9312 and asking for your Service representative.

Army	- Mr. Jeff DeHart (jdehart@arl.mil)
Navy	- Ms. Cathy Nodgaard (nodgaac@onr.navy.mil)
Air Force	- Dr. Joan Fuller (fullerjo@af.pentagon.mil)

General public information on the DU S&T Program is available on the Web at www.darpa.mil/jdupo/index.html. Specific information and advice for DoD program managers can be found at www.darpa.mil/jdupo/govpm/index.html. Please note that this latter Web address is not for public release – it is intended for government use only.

DU S&T Program Funding

Funding for the DU S&T Program will be contained in Services lines for the first time in Fiscal Year 1999. It is anticipated each Service will have approximately \$20 million for the execution of DU S&T Projects. Administrative costs for the execution of the DU S&T Program may not exceed 2% of the funds appropriated to the Service for the Program. The remaining funds should be used for the initiation of projects. DU S&T funds may not exceed more than 25% of the cost of the project at the time of award. No additional funds can be made available from the DU S&T Program beyond these initial funds under any circumstances.

Funding obtained from other government agencies should also be matched by industry, but can not be counted toward meeting the Service goals. However, no more than 50% of the government’s share of a project can come from non-DoD sources. The balance of the government share should be equally shared between the sponsoring Service and the DU S&T Program.

Summary Sheets

It is requested that each Service provide a summary sheet on each project prior to the obligation of funds on that project. A copy of the form is at Tab B or can be obtained from the Web site. Summary sheets should be sent to:

Director, Defense Research & Engineering
ATTN: Dual Use Technology Office
5203 Leesburg Pike, Suite 1401
Falls Church, VA 22041

Tab A
Focus Areas for Fiscal Year 1999

Affordable Sensor Technology -- In the twenty-first century, the performance of many sensing devices, as currently designed, will begin nearing the fundamental limits of physics. Continued improvements in performance will only be possible by miniaturization, automation, sensor integration, sensor fusion, digitization, and seamless information distribution. Sensors will need to provide a near real-time picture of the battlefield and they will need to operate during the day, at night and in all weather conditions. This area seeks to partner with commercial industry to tap into advances in commercial sensors and develop the sensor hardware, software, and system architecture needed to meet both the future needs of the military as well as commercial market. In addition, commonality between commercial and military sensors will help reduce the cost of sensors for both markets. Sensor technologies of interest include acoustic sensor arrays, seismic sensors, biological/chemical/nuclear agent detectors, laser radars, and location/navigation sensors.

Aircraft Sustainment -- Aircraft sustainment has three basic technology areas: robust and reliable designs, parts obsolescence decision tools and simulation models, and advanced industrial sustainment practices. These requirements include low-cost, low volume manufacturing, rapid repair and remanufacturing, and increased readiness support. Sustainment and readiness technologies will enable the life extension of aging systems, product and process enhancements, and reduced weapon system life cycle costs. Many of the same issues facing the DoD's aging aircraft are being encountered by commercial airlines as they extend the lives of their fleet. By working together solutions to this common problem can be developed.

Distributed Mission Training -- Simulated training requirements are not unique to the DoD. Development of Distributed Mission Training (DMT) will result in a network of training assets, including live, simulated and computer-generated, which allows multiple players at multiple sites to engage in complex, scalable and tailorable synthetic training environments that mirror the real world be it a battlefield or an industrial facility. This initiative will seek to partner with commercial firms to develop simulated training capabilities that will not only meet DoD continuing need for simulated training but will also be applicable to the growing need in commercial industry.

Fuel Efficiency and Advanced Propulsion Technology -- DoD will benefit significantly from the development of fuel-efficient, low-emission power sources. This need is pervasive among all of the Services due to the cost and logistics burden of providing fuel to combat forces. This initiative will focus on the efficient increase of speed and thrust, reducing fuel requirements, and reducing emissions. The driving force for improved power and propulsion in the consumer sector are the same as for the military: increased density, enhanced safety, lower cost and environmental friendliness while still increasing power/energy density and the results of projects initiated under this initiative will be directly applicable to both the military and commercial markets.

Information Systems and Technology -- The advent of the information revolution has significantly increased the need to exchange, manage, manipulate, and protect large amounts of essential information. Technologies developed will provide the tools necessary to facilitate large

volumes of information and to alleviate the cognitive "information overload" intrinsic in the nature of both the battlefield and the corporate boardroom.

Medical Technologies -- New technology breakthroughs offer opportunities to simplify and dramatically improve the prevention, diagnosis and treatment of injury in military operations and training. These technologies have broad application and utility in both civilian and military sectors, for the treatment of both injuries and diseases. These technologies will also enable earlier diagnoses needed for emergency treatment, thereby improving the chances of patient survival either on the battlefield or in today's trauma centers. A joint DoD industry program will speed up development and commercialization of these technologies. Modernized and deployed medical technologies in the area of prevention and health promotion allow for significant cost avoidance in both the military and public health sectors.

Advanced High Speed Vessels and Structural Systems for Large Sea-Based Structures -- This focus area addresses those requirements needed by the DoD and commercial sector to build high performance and yet affordable platforms over the life cycle. Technologies of particular interest include: high speed vessels, structural health monitoring systems, and reliability of composite structures. Additionally, efforts in the areas of manufacturing and maintaining advanced composite materials, metallics, ceramics, and operational chemicals that are more cost-effective than state-of-the-art approaches will enable the DoD as well as the commercial world to field vehicles without sacrificing capabilities or substantial increases in cost.

Environmental Monitoring -- The DoD and commercial sector require environmental assessments for planning and decision making. The ability is needed to provide the most accurate meteorological and oceanographic forecasts in real-time and with high resolution. Models must be able to support both open ocean and littoral areas including undersea. Technologies of particular interest include: miniaturized sensor design; sensor deployment by unmanned aerial and undersea vehicles; optimization methods for sensor placement and reporting; real time communication and processing of sensor data for a regional area; prediction of changing environmental assessment requirements; and optimum data assimilation methods for reducing uncertainty in environmental analyses. The need for accurate meteorological and oceanographic forecasting is as critical in the commercial world as in defense and a dual use program will result in a system(s) that will serve the needs of both worlds.

Dual Use S&T Proposal Summary Sheet		Army	DU S&T USE ONLY		
		Navy			
		Air Force			
1. Proposal Title:					
Topic Area:			Focus Area Supported:		
2. Name of Proposers (include names of ALL non-federal participants and indicate category code from below - For Lead Proposer, include POC name, phone, and e-mail):					
Category of Firm (indicate next to name of ALL non-federal participants ALL codes that apply):					
1.	Commercial Firm/Division*	3.	Defense Firm	5.	Small Business
2.	Not-for Profit	4.	Foreign Owned	6.	Other--explain-
3. Service Sponser (Name, Organization, Address, Phone, FAX, E-Mail):					
4. Project Description (Provide a brief description of the technology and project):					

5. Project Cost Summary:					
Total Project Cost:					
DU S&T Funds Requested					
Service Funds: (include FYs and PEs - include individual dollar amounts if split between PEs.)		FY:	PE:		
		FY:	PE:		
		FY:	PE:		
Non-Federal Cost Share: (list each participant below)	Total \$ Amount	\$ Amount High Quality Cost Share	\$ Amount Low Quality Cost Share	\$ Amount Unacceptable Cost Share	For Profit Participant (yes/no)

*Commercial Firm/Division: Firms/divisions whose commercial sales have averaged at least 70% of total sales over the past 5 years.

