

Defense Advanced Research Projects Agency and Innovation

Dr. Kathleen Fisher, Deputy Director
Information Innovation Office (I2O)



OCTOBER 4, 1957



STRATEGIC SURPRISE



February 7, 1958
NUMBER 5105.15

Department of Defense Directive

SUBJECT Department of Defense Advanced Research Projects Agency

I. PURPOSE

The purpose of this directive is to provide within the Department of Defense an agency for the direction and performance of certain advanced research and development projects.

II. RESPONSIBILITY AND AUTHORITY

A. Establishment

In accordance with the provisions of the National Security Act of 1947, as amended, and Reorganization Plan No. 6 of 1953, there is established in the Office of the Secretary of Defense the Department of Defense Advanced Research Projects Agency. The Agency will be under the direction of the Director of Advanced Research Projects.

B. Responsibility

The Agency shall be responsible for the direction or performance of such advanced projects in the field of research and development as the Secretary of Defense shall, from time to time, designate by individual project or by category.

C. Authority

Subject to the direction and control of the Director:

1. The Agency is authorized to direct such research and development projects being performed within the Department of Defense as the Secretary of Defense may designate.
2. The Agency is authorized to arrange for the performance of research and development work by other agencies of Government, including the military departments, as may be necessary to accomplish its mission in relation to projects assigned.

3. The Agency is authorized to enter into contracts and agreements with individuals, private business entities, educational, research or scientific institutions including federal or state institutions.
4. The Agency is authorized to acquire or construct such research, development and test facilities and equipment as may be approved by the Secretary of Defense, in accordance with applicable statutes. However, existing facilities of the Department of Defense shall be utilized to the maximum extent practicable.

III. ORGANIZATION

- A. The Director of Advanced Research Projects shall report to the Secretary of Defense.
- B. The Department of Defense Advanced Research Projects Agency shall be provided such personnel and administrative support as may be approved by the Secretary of Defense.
- C. Other officers and agencies of the Office of the Secretary of Defense within their respective areas of responsibility shall provide support to the Director of the Advanced Research Projects Agency as may be necessary for him to carry out his assigned functions.

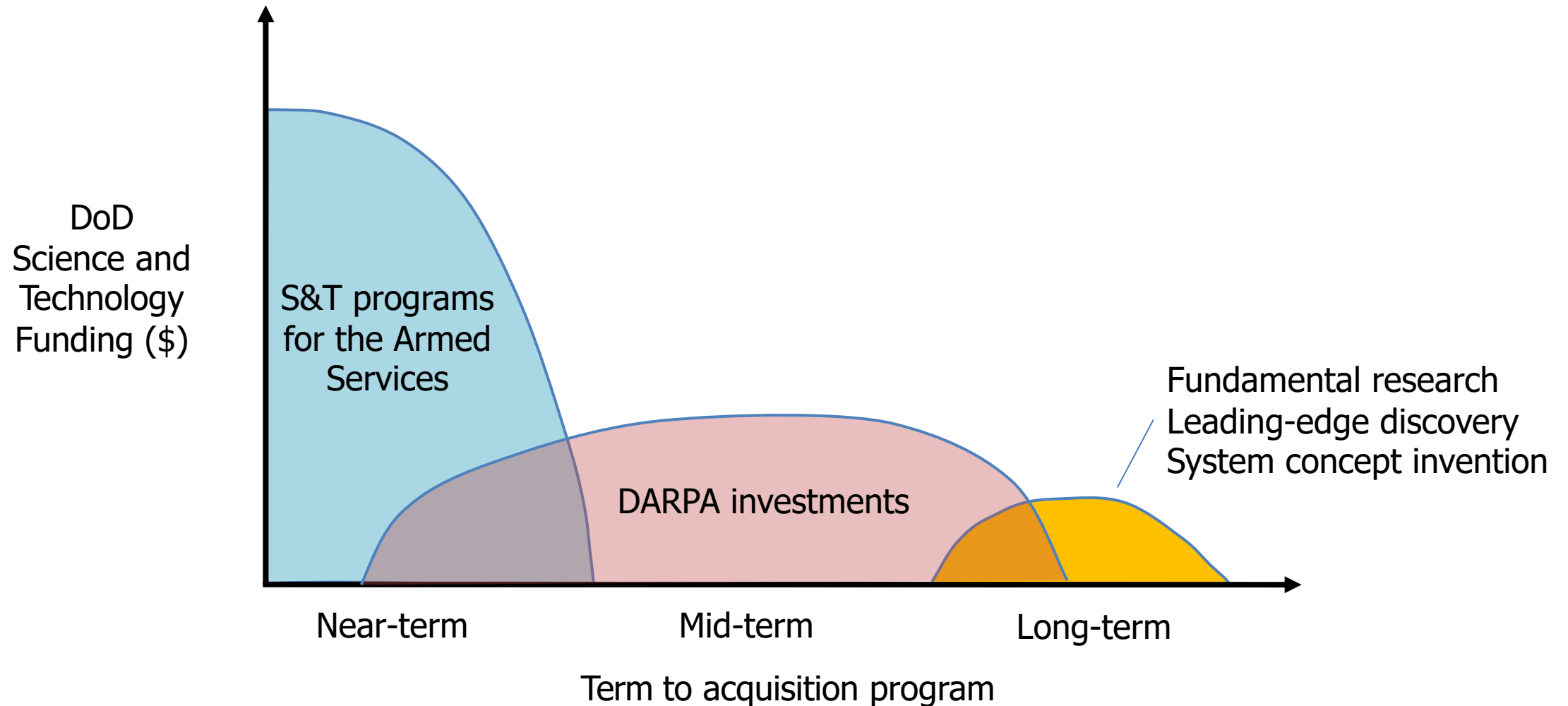
IV. EFFECTIVE DATE

This directive is effective immediately.

James L. Terry



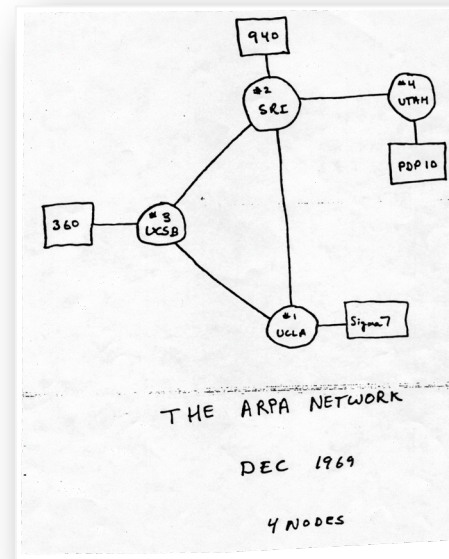
DARPA Role in Science and Technology



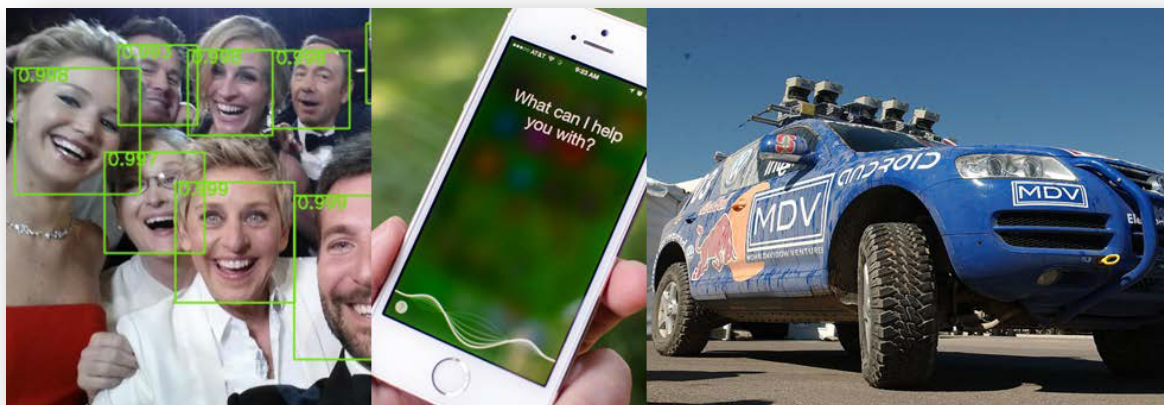
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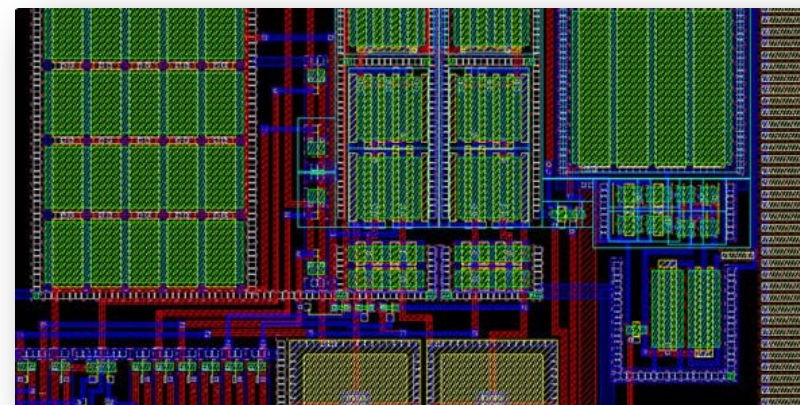
The internet



Foundations of artificial intelligence



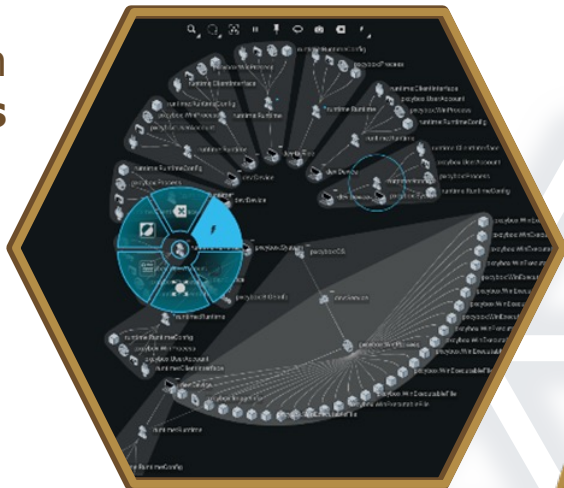
Foundations for advanced ICs





Information Innovation Office (I2O)

Advantage in
cyber operations



Proficient
artificial intelligence



Resilient,
adaptable, and
secure systems



Confidence in the
information domain



DARPA is

People

Performers

Strategy

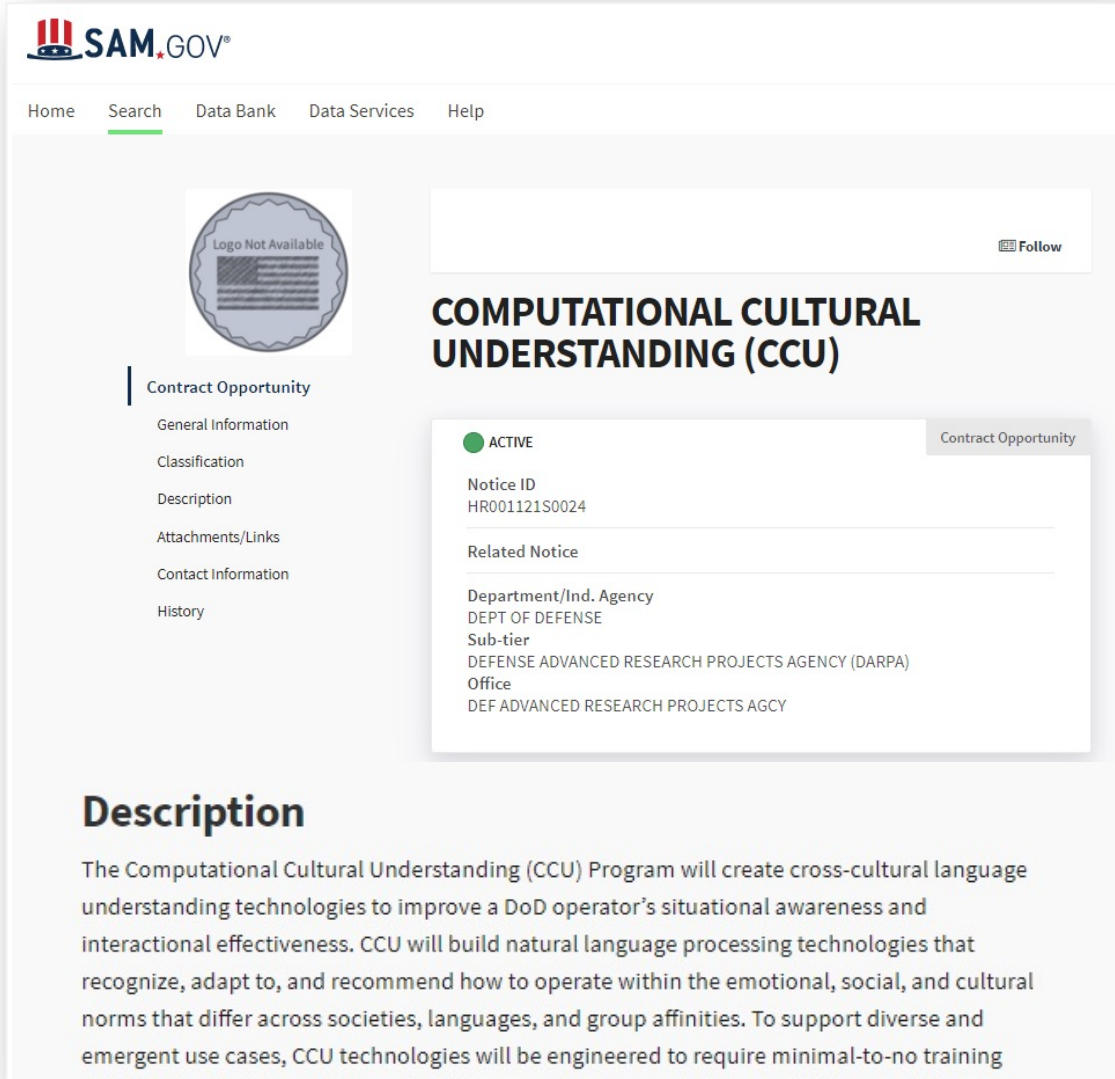
Culture





Program managers and their teams are the core of the organization

- Delegated authority to execute programs
- Trusted to manage significant funds to impact problems facing national security
- Are passionate about their field
- Came here to start a program that solves a problem they could not solve anywhere else
- Incredible opportunity to
 - Serve the country
 - Solve a problem with an impact to national security
 - Develop a network among the brightest people on the planet



The screenshot shows the SAM.GOV website interface. At the top is the SAM.GOV logo and navigation links: Home, Search, Data Bank, Data Services, and Help. The main content area features a placeholder for a logo (labeled 'Logo Not Available') and a 'Follow' button. The title of the contract opportunity is 'COMPUTATIONAL CULTURAL UNDERSTANDING (CCU)'. A sidebar on the left lists navigation options: Contract Opportunity, General Information, Classification, Description, Attachments/Links, Contact Information, and History. The main details section includes an 'ACTIVE' status indicator, the Notice ID 'HR001121S0024', and a 'Related Notice' section. The 'Related Notice' section lists the Department/Ind. Agency as 'DEPT OF DEFENSE', the Sub-tier as 'DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (DARPA)', and the Office as 'DEF ADVANCED RESEARCH PROJECTS AGCY'. A 'Description' section at the bottom provides details about the CCU program.

Contract Opportunity

General Information

Classification

Description

Attachments/Links

Contact Information

History

COMPUTATIONAL CULTURAL UNDERSTANDING (CCU)

ACTIVE

Notice ID
HR001121S0024

Related Notice

Department/Ind. Agency
DEPT OF DEFENSE

Sub-tier
DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (DARPA)

Office
DEF ADVANCED RESEARCH PROJECTS AGCY

Description

The Computational Cultural Understanding (CCU) Program will create cross-cultural language understanding technologies to improve a DoD operator's situational awareness and interactional effectiveness. CCU will build natural language processing technologies that recognize, adapt to, and recommend how to operate within the emotional, social, and cultural norms that differ across societies, languages, and group affinities. To support diverse and emergent use cases, CCU technologies will be engineered to require minimal-to-no training

Performers do the work

- DARPA maintains no laboratories or infrastructure
- Competitive, public solicitation of proposals
- Seek out the best talent on the planet
- Performer ecosystem:
 - Big and small companies, universities, government and quasi-government organizations
- Performers sometimes encouraged to join teams to cover multiple fields
- Average program duration of 4-5 years
- Success means transition
 - Defense
 - Commercial



Information Innovation Office strategy

Thrust Areas:

Proficient **artificial intelligence**

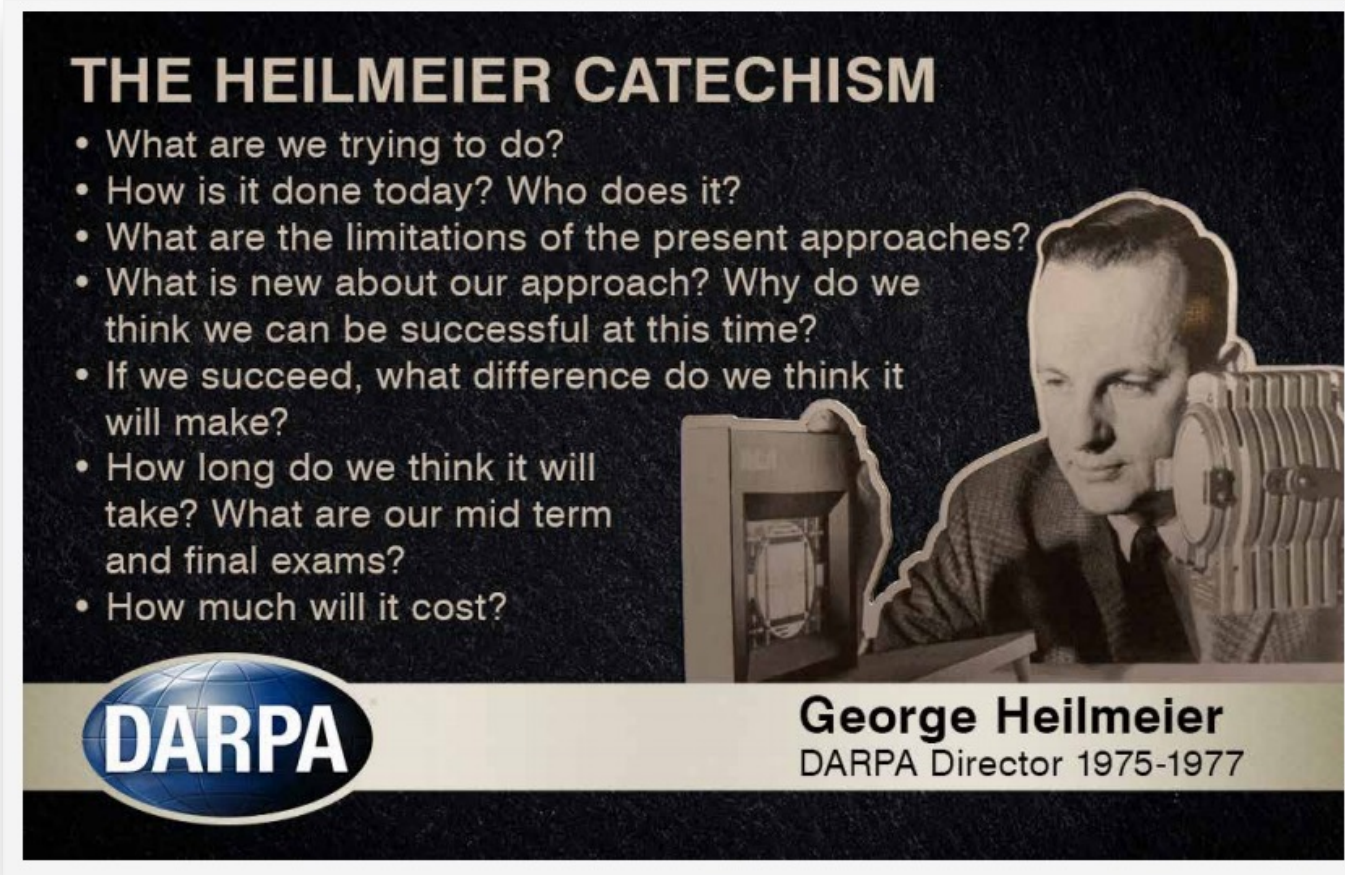
Advantage in **cyber operations**

Resilient, adaptable, and **secure systems**

Confidence in the **information domain**

Dynamic flexible framework

- Not a roadmap
- Informs recruiting and hiring process
- Lays out a framework for the government budget process
- Adapts to PM idea creation (bottom-up input)



THE HEILMEIER CATECHISM

- What are we trying to do?
- How is it done today? Who does it?
- What are the limitations of the present approaches?
- What is new about our approach? Why do we think we can be successful at this time?
- If we succeed, what difference do we think it will make?
- How long do we think it will take? What are our mid term and final exams?
- How much will it cost?

 **George Heilmeier**
DARPA Director 1975-1977

Mission: prevent strategic technological surprise

- Willingness to take risks and tolerate failure
- Entrepreneurial
- “Projects” focus on proving something is possible, then move on
 - Keep ideas fresh through planned turnover in personnel
- Programs executed by competitively selected performers external to DARPA
- DARPA offices organized around broad technical thrusts
 - Flat organization with the PM as the nucleus



Doing business with DARPA

Program Managers are key to working with DARPA

- Become familiar with DARPA's challenges and opportunities for National Security
- Contact a PM about your idea prior to submitting a abstract, white paper, or proposal to gain insight

Typical Solicitation Types:

- Program-specific BAAs released throughout the year (typically allow any type of award)
- Office-wide BAAs for one or two years with general tech-office scope
- Research announcements for grants or cooperative agreements (e.g., Young Faculty Award)
- Program Solicitations for Other Transactions (e.g., Artificial Intelligence Exploration)



www.darpa.mil