

# Defense Advanced Research Projects Agency and Innovation

Dr. Kathleen Fisher, 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.

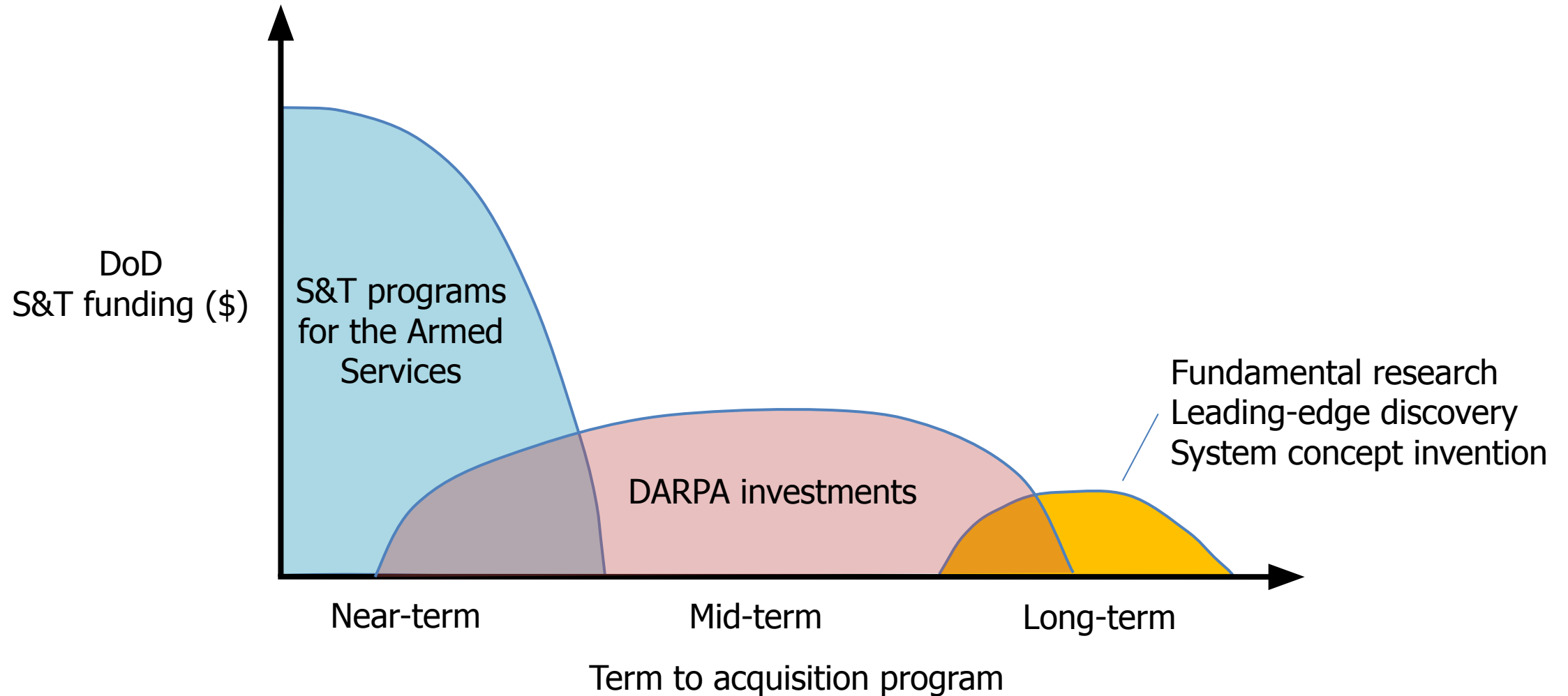
### IV. EFFECTIVE DATE

This directive is effective immediately.

*James D. Terry*



# DARPA role in science and technology (S&T)





## NSF: Science

- Basic research driven by curiosity and discovery

## DARPA: Impact

- Transform revolutionary concepts and even seeming impossibilities into practical capabilities



## THE HEILMEIER CATECHISM

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

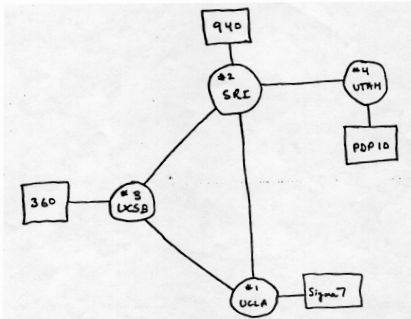


**George Heilmeier**  
DARPA Director 1975-1977

- Prove something is possible, then move on
- Keep ideas fresh through planned turnover in personnel
- Willingness to take risks and tolerate failure
- DARPA offices organized around broad technical thrusts



# Information Innovation



**THE INTERNET**

THE ARPA NETWORK  
DEC 1969  
4 NODES



**ADDRESS SPACE LAYOUT**



**RED BALLOON CHALLENGE**



**DARPA CYBER GRAND CHALLENGE**



**MOTHER OF ALL DEMOS**



**LANGUAGE TRANSLATION**



**AUTONOMOUS VEHICLES**

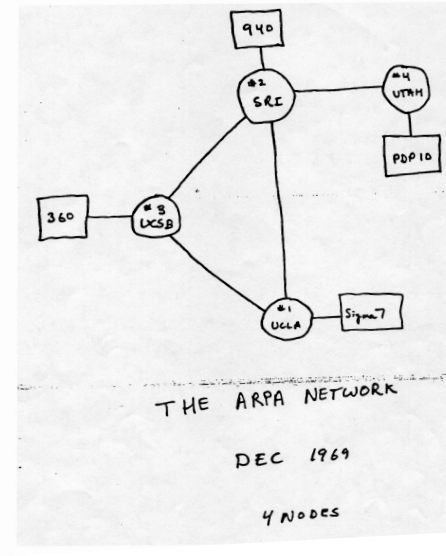


**PERSONALIZED ASSISTANT THAT LEARNS**

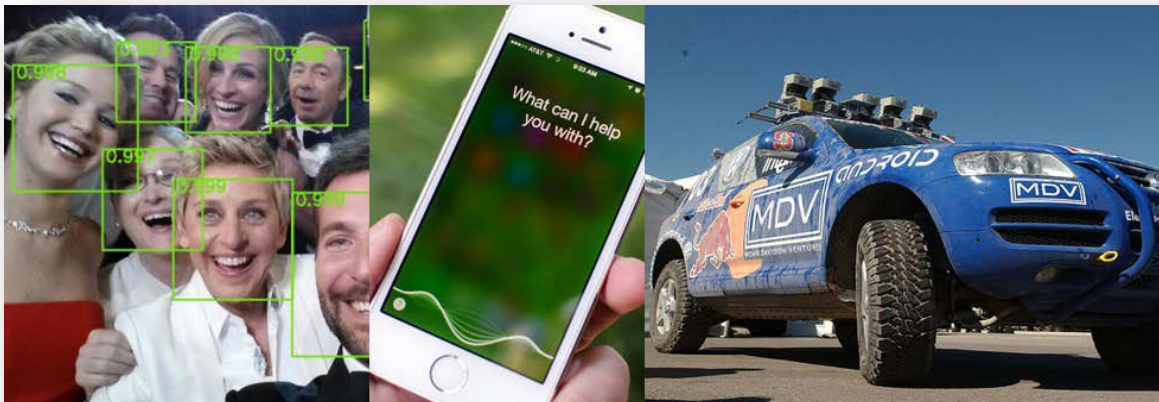
### The first mouse



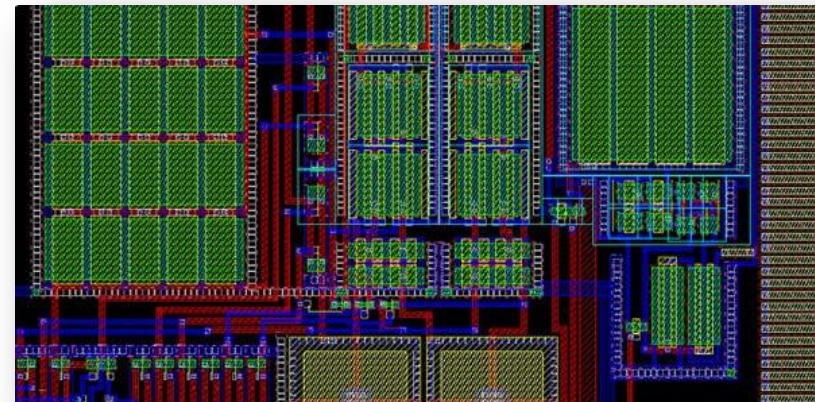
### The internet



### Foundations of artificial intelligence



### Foundations for advanced ICs





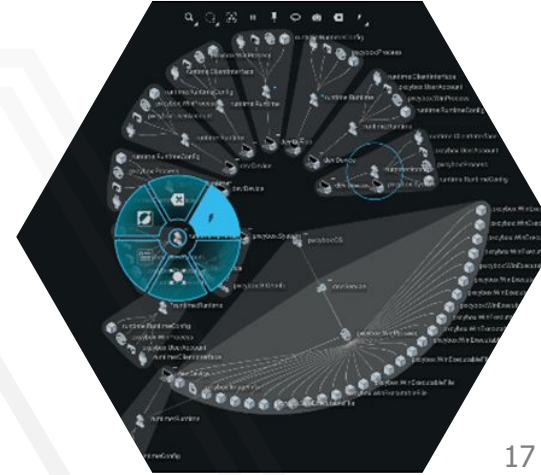
# Information Innovation Office (I2O)

Proficient **artificial intelligence**



11 programs + 5 AI explorations

Advantage in **cyber operations**



17 programs

Confidence in the **information domain**



6 programs

Resilient, adaptable, and **secure systems**



15 programs





# Doing business with DARPA

## Program Managers

- Key becoming familiar with DARPA's challenges and opportunities
- Contact a PM to gain insight about your idea prior to submitting an abstract, white paper, or proposal

## I2O proposers' day

- Fall 2024
- I2O mailing list: <https://lp.constantcontactpages.com/su/9rZHGPf>

## DARPA Connect

- Stimulate growth and collaboration with small businesses and education institutions new to the national security space
- Upcoming events:
  - DARPAConnect Arizona Regional Pop-up Event
    - Feb 29, 2024
    - Warehouse 215, 215 East Grant Street, Phoenix, AZ
  - South by Southwest
    - Mar 8, 2024, to Mar 12, 2024
    - Austin, TX



[arpaconnect.us](https://arpaconnect.us)



[www.darpa.mil](http://www.darpa.mil)