



Defense Primer: RDT&E

Advanced technology plays a critical role in ensuring U.S. national security. To maintain technological superiority on the battlefield, the Department of Defense (DOD) relies on scientific and technical knowledge developed in large measure through research, development, test, and evaluation (RDT&E) funded by the department and performed by industry, universities, federal laboratories, and others. DOD also relies increasingly on technology developed by the private sector for commercial markets. This In Focus describes DOD’s RDT&E appropriations structure and funding levels.

DOD appropriations are provided annually through the defense appropriations act, one of the 12 regular appropriations acts that provide most of the discretionary funding for operation of the federal government. DOD RDT&E funding is generally provided in four of this act’s titles (see box). Congress also sometimes provides DOD RDT&E funding through supplemental appropriations acts. Congress appropriated a total of \$99.0 billion for DOD RDT&E for FY2019 in the Defense Appropriations Act, 2019, included as Division A of the Department of Defense and Labor, Health and Human Services, and Education Appropriations Act, 2019 and Continuing Appropriations Act, 2019 (P.L. 115-245).

RDT&E by Organization

RDT&E Appropriations Under Title IV

Approximately 96% of DOD’s RDT&E funding is appropriated in Title IV (Research, Development, Test, and Evaluation), which includes appropriations for the Army, Navy, Air Force, a Defense-wide RDT&E account, and the Director of Operational Test and Evaluation. The Defense-wide account includes the Missile Defense Agency (MDA), Defense Advanced Research Projects Agency (DARPA), Office of the Secretary of Defense, and 15 other DOD organizations. Within each of these accounts are program elements (PEs) that provide funding for particular activities (e.g., night vision technology, aviation survivability).

RDT&E Under Other Titles

RDT&E funds are also appropriated for programs in other titles of the defense appropriations act. For example, RDT&E funds are sometimes appropriated as part of the National Defense Sealift Fund in Title V and as part of the Chemical Agents and Munitions Destruction Program and Defense Health Program in Title VI.

In some years, RDT&E funds have also been appropriated in Title IX as part of DOD’s funding for Overseas Contingency Operations (OCO). Typically, the RDT&E funds appropriated for OCO activities support specified PEs in Title IV, though they are requested and accounted for separately. Alternatively, they may be provided to a transfer

fund. Congress establishes transfer funds for a particular purpose, and may authorize DOD to transfer a portion of these funds to other accounts, such as RDT&E, to help achieve that purpose.

Defense Appropriations Act Titles That Fund RDT&E

Title IV: Research, Development, Test, and Evaluation

- Army
- Navy
- Air Force
- Defense-wide
- Operational Test and Evaluation

Title V: Revolving and Management Funds

- National Defense Sealift Fund

Title VI: Other Defense Programs

- Chemical Agents and Munitions Destruction
- Defense Health Program
- Inspector General

Title IX: Overseas Contingency Operations

- Any of the above
- Transfer Funds

RDT&E by Character of Work

While DOD Title IV funds are appropriated only by organization, DOD budget justifications and congressional appropriations reports and explanatory statements also typically describe this funding by the character of the work to be performed. This characterization consists of seven categories, each with a budget activity code (6.1 through 6.7) and a description. (See **Table 1.**)

Table 1. DOD RDT&E Budget Activity Codes

Code	Description
6.1	Basic Research
6.2	Applied Research
6.3	Advanced Technology Development
6.4	Adv. Component Development and Prototypes
6.5	System Development and Demonstration
6.6	RDT&E Management Support
6.7	Operational Systems Development

Source: Department of Defense, *Financial Management Regulation (DoD 7000.14-R)*, Volume 2B, November 2017.

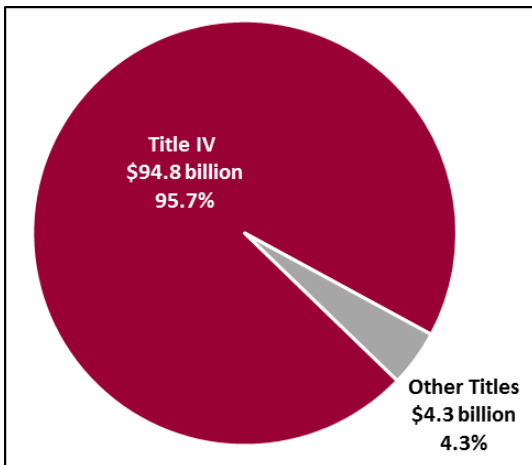
Funding in codes 6.1 to 6.3 is referred to by DOD as the science and technology (S&T) budget. This portion of DOD RDT&E is often singled out for attention by analysts, as it is seen as the pool of knowledge necessary for the development of future military systems. In contrast, 6.4, 6.5, and 6.7 funds are focused on the application of existing scientific and technical knowledge to meet current or near-

term operational needs. The funds in 6.6 are for RDT&E management and support work in any of the other RDT&E budget accounts. Within the S&T program, basic research (6.1) receives special attention, particularly by the nation’s universities. DOD spends nearly half of its basic research budget at universities. DOD is a substantial source of federal funds for university R&D in certain fields, such as aerospace, aeronautical, and astronautical engineering (40%); electrical, electronic, and communications engineering (39%); mechanical engineering (28%); and metallurgical and materials engineering (24%); computer and information sciences (28%); and materials science (25%).

Funding Profile of DOD RDT&E

Total DOD RDT&E for FY2019 is \$99.0 billion, of which Title IV funding accounts for \$94.8 billion (95.7%). (See Figure 1.)

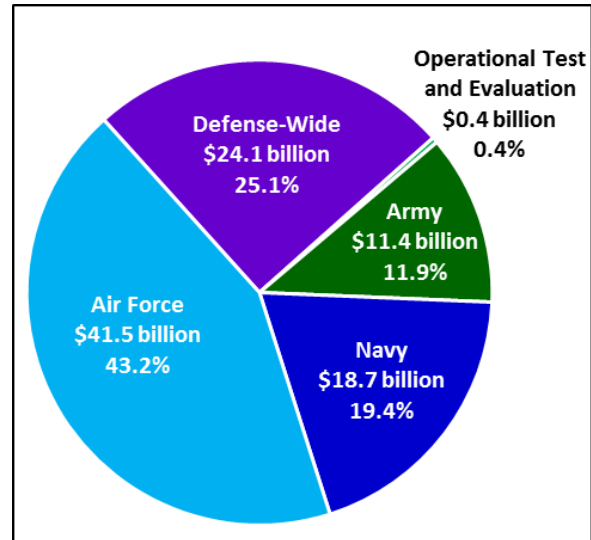
Figure 1. Title IV Share of Total RDT&E, FY2019



Source: CRS analysis of Department of Defense, FY2020 RDT&E Programs (R-1), March 2019.

FY2019 RDT&E provided by Title IV and Title IX (OCO) is \$96.0 billion. The composition of this funding by organization is shown in Figure 2.

Figure 2. Title IV and Title IX (OCO) RDT&E by Organization, FY2019

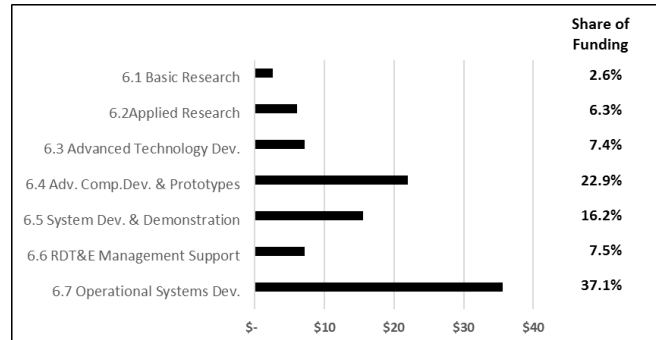


Source: CRS analysis of Department of Defense, FY2020 RDT&E Programs (R-1), March 2019.

Figure 3 illustrates FY2019 Title IV and Title IX (OCO) RDT&E funding by character of work. DOD S&T funding (6.1-6.3) accounted for \$15.7 billion (16.3%) of this funding. RDT&E funds provided in other DOD appropriations titles and supplemental acts are not included in this analysis as they are not parsed by character of work.

Figure 3. RDT&E by Character of Work, FY2019

Total obligational authority, in billions of current dollars



Source: CRS analysis of Department of Defense, FY2020 RDT&E Programs (R-1), March 2019.

Relevant Statutes

- Title 10, U.S. Code, Chapter 139—Research and Development
- Title 10, U.S. Code, Chapter 133—Under Secretary of Defense for Acquisition, Technology, and Logistics
- Title 10, U.S. Code, Chapter 138(b)(8)—Assistant Secretaries of Defense—Assistant Secretary of Defense for Research and Engineering

CRS Products

CRS Report R45150, *Federal Research and Development (R&D) Funding: FY2019*, coordinated by John F. Sargent Jr.

CRS Report R44711, *Department of Defense Research, Development, Test, and Evaluation (RDT&E): Appropriations Structure*, by John F. Sargent Jr.

CRS Report R45403, *The Global Research and Development Landscape and Implications for the Department of Defense*, by John F. Sargent Jr., Marcy E. Gallo, and Moshe Schwartz.

CRS Report R44010, *Defense Acquisitions: How and Where DOD Spends Its Contracting Dollars*, by Moshe Schwartz, John F. Sargent Jr., and Christopher T. Mann.

Other Resources

Under Secretary of Defense (Comptroller), DOD Budget Request

Department of Defense Research, Development, Test, and Evaluation Programs (R-1) Amendment, FY2019

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