



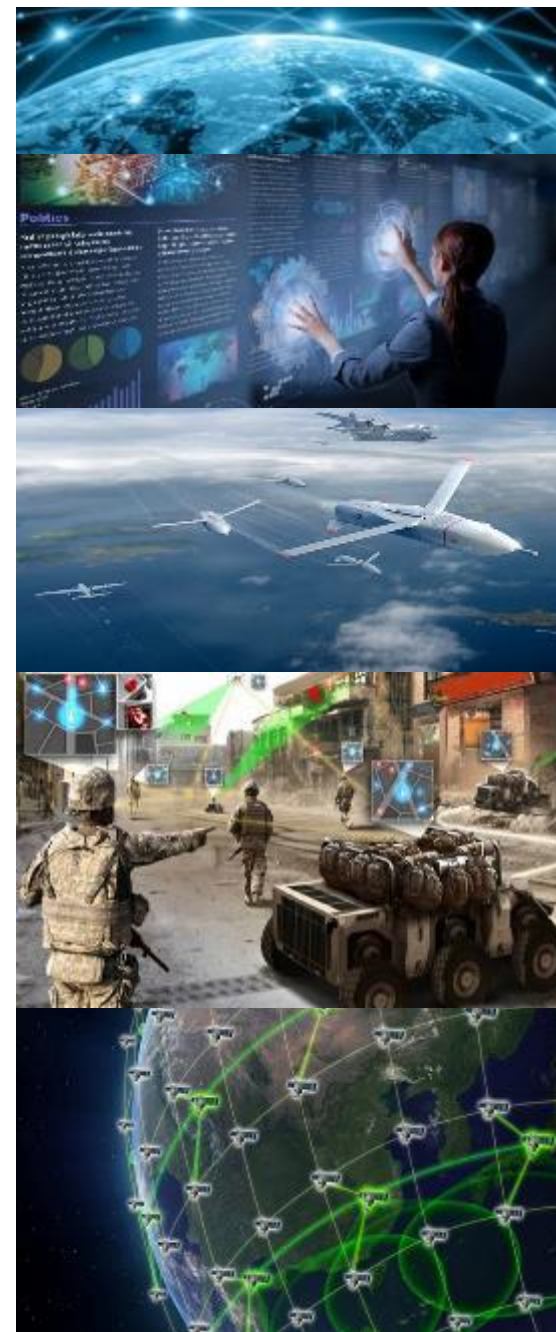
Rapid Reaction Technology Office (RRTTO)

Mr. Jon Lazar

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USD(R&E) Mission

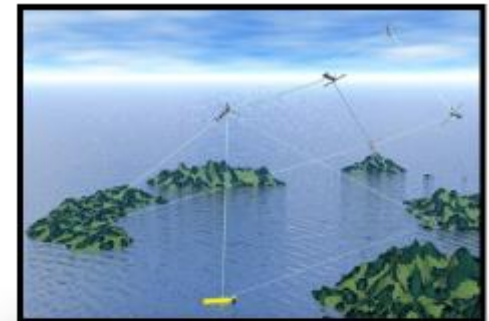


Ensure Technological Superiority for the U.S. Military

- Set the technical direction for the Department
- Advance new capabilities, concepts, and prototyping activities
- Independent technical risk assessment

Bolster Modernization

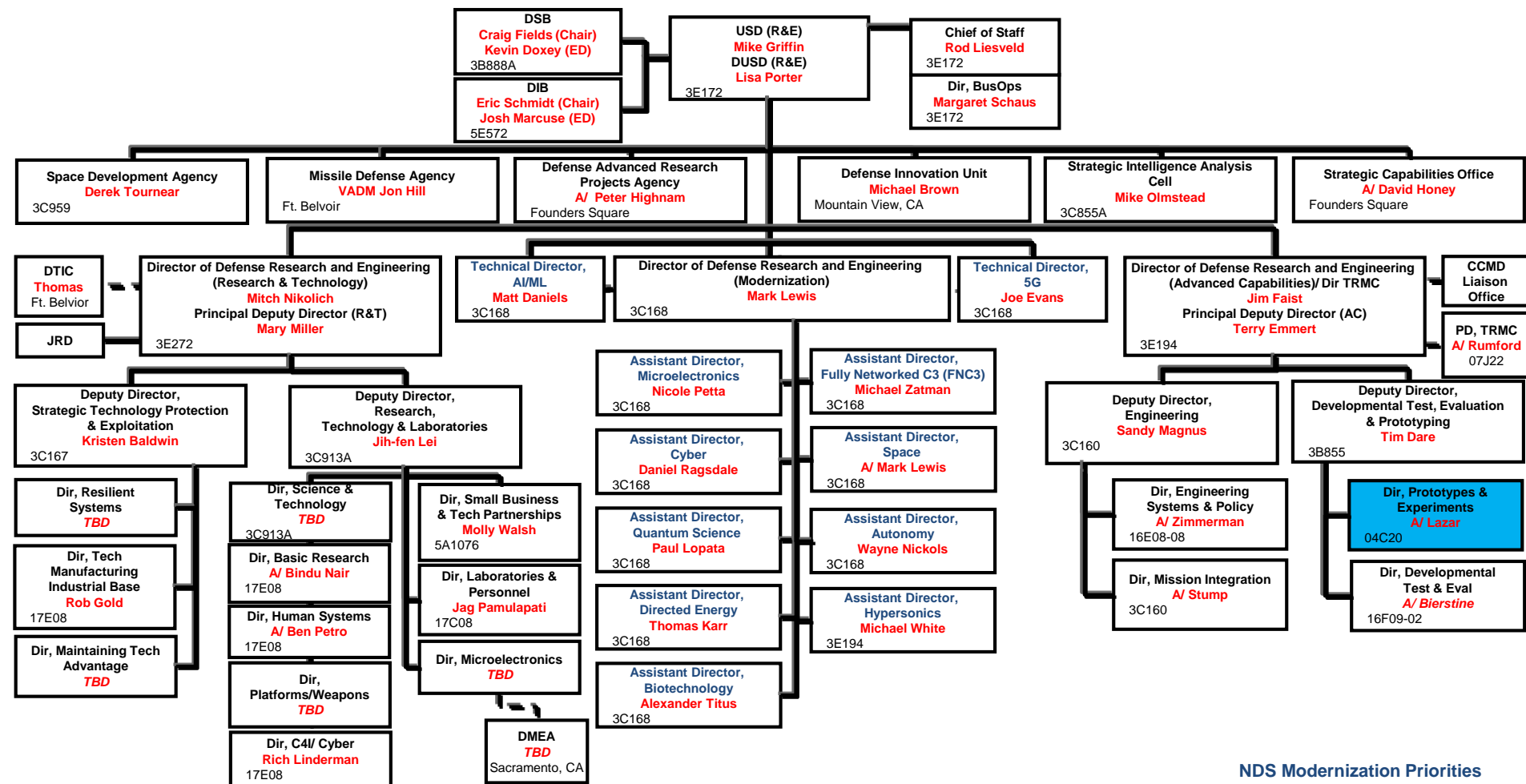
- Pilot new acquisition pathways and concepts of operation
- 5G, AI/Machine Learning, Autonomy, Biotech, Cyber, Directed Energy, Fully Networked C3, Hypersonics, Microelectronics, Quantum, Space
- Accelerate capabilities to the warfighter



There is a Portfolio Manager (Assistant Director) who is responsible for establishing the DoD-wide, mission-focused strategy and execution plan for each modernization priority



OUSD (R&E) Organizational Structure



NDS Modernization Priorities



Prototypes & Experiments

Align and accelerate DoD modernization through prototyping and experimentation

- Deliver Joint mission capabilities to address key modernization gaps
- Enable multiple funding pathways to provide impact and agility
- Realize the 2018 National Defense Strategy through technical overmatch

Facilitate Service prototyping and experimentation efforts

- Inform concept selection
- Enable venues, experiments, and support infrastructure to explore CONOPS and red team capabilities
- Accelerate and transition new Joint mission capabilities to support Combatant Commands (CCMD)

Anticipate emerging threats and develop counters

Do the Right Things

- Know the problem space
- Know the art of the possible
- Know what success looks like

Do Things Right

- Involve the user
- Accept risk, pursue innovation
- Maintain agility



Why Prototypes & Experiments

“The drive to develop new technologies is relentless, expanding to more actors with lower barriers of entry, and moving at accelerating speed. . . . Success no longer goes to the country that develops a new technology first, but rather to the one that better integrates it and adapts its way of fighting.”
2018 National Defense Strategy

Vision

- Create pathways for new ideas to become realized capabilities.

Mission

- Develop prototypes and conduct operational experiments to accelerate, align, and evaluate Joint mission capabilities. Address key modernization gaps by leveraging the breadth of domestic and allied engineering talent. Deliver capabilities to the Joint Force.

P&E leverages academic research, traditional and non-traditional commercial technologies, Service experience, and CCMD needs to transform risk, technical uncertainty, and capability gaps into opportunities



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MEMORANDUM FOR: SEE DISTRIBUTION LIST

SUBJECT: Fiscal Year 2020 Consolidated Call for Proposals

The Under Secretary of Defense for Research and Engineering (USD(R&E)), Developmental Test, Evaluation, and Prototyping (DTEP) office is accepting prototyping, demonstration, experimentation, and mission engineering proposals for Fiscal Year (FY) 2020. Proposed concepts should align to the 2018 National Defense Strategy, the USD(R&E) modernization priorities, and/or the Joint Mission Forum (JMF) focus areas as shown in Tab A. Project submissions should demonstrate Military Service or defense agency commitment through co-funding, addressing a Joint need, and possessing a clear path to transition.

DTEP is consolidating the FY 2020 proposal process with the intent to accelerate strategic discovery, development, and delivery of new capabilities to the warfighter. This call letter addresses the following Program Element (PE) portfolios:

- DoD Rapid Prototyping Fund (DoD RPF)
- Rapid Prototyping Program (RPP)
- Defense Modernization & Prototyping (DMAP)
- Joint Capability Technology Demonstration (JCTD)
- Foreign Comparative Test (FCT)

Through consolidation, DTEP is focused on developing a single call process that enables partners to submit innovative proposals throughout the execution year(s), increasing the Department's ability to develop advanced capabilities. Details on each portfolio and submission guidelines are provided in Tab B.

For the FY 2020 Prototyping Senior Steering Group (PSSG) schedule and submission deadlines, see Tab C. Proposals must be submitted using the templates in Tab D and will be reviewed on a semi-annual basis for competitive selection. For proposals that are selected and requesting more than \$1M in a single FY, the proposal lead will be required to brief the PSSG with representatives from OSD(R&E) and other select OSD organizations, the Joint Staff, Military Service S&T and acquisition leads, and the Combatant Commands. This process facilitates increased coordination and cooperation across the Department enabling it to reduce duplication of effort and foster collaborative partnerships.

I request your support in identifying potential projects that accelerate Joint, cross-cutting capabilities for the warfighter and advance the Department's drive for modernization and increased lethality. The OSD(R&E) requests the widest dissemination of this call for proposals.

Timothy S. Dure
Deputy Director, Developmental Test,
Evaluation & Prototyping

Attachments: As Stated

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Other requests for this document shall be handled via the OSD(R&E) DTEP.

Single Call for Proposals

(Submit anytime during the year of execution)

FY 2020 Strategic Alignment

2018 National Defense Strategy

- Joint lethality in contested environments
- Command, control, communications, computers and intelligence, surveillance, and reconnaissance (C4ISR)
- Missile Defense
- Forward force maneuver and posture resilience
- Resilient and agile logistics

DoD Modernization Priorities

- 5G
- Autonomy
- Cyber
- Fully Networked C3
- Microelectronics
- Space
- AI / ML
- Biotechnology
- Directed Energy
- Hypersonics
- Quantum

FY 2020 Mission Priority Alignment

Joint Mission Forum

USD(R&E), DTEP

- Time Sensitive Target Defeat
- Advance Electronic Warfare
- Integrated Fires-Fire Control Next
- Fully Network Command, Control, & Communications
- Joint Combined Arms Integration & Demonstration Campaign

JS J7/J8 JFIC

- Global Joint Command & Control
- Global Fires
- Contested Logistics
- Information Advantage
- Homeland Defense

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Tab B: DTEP Program Overview

Program Element	Program Title	Funding Type	Program Budget	Project Duration	Key Milestones
Rapid Prototyping Fund (RPF)	Directly supporting Mission Critical Prototyping	5.1m	<\$50M	1-2 yrs	Complete RPF 2020
	Groundbreaking	0.1m	<\$10M only	2-3 yrs	Developing RPF 2020
Rapid Prototyping Program (RPP)	Service Programs of Interest	0.5m	<\$10M	1-2 yrs	Developing RPP 2020
Defense Modernization & Prototyping (DMAP)	Pool of proposals prototyping and experimentation	0.2	<\$10M	<1 yr	Developing DMAP 2020
Joint Capability Technology Demonstration (JCTD)	Continued Command	0.1	<\$10M	1-2 yrs	Developing JCTD 2020
Foreign Comparative Test (FCT)	Full of Foreign products	0.1	<\$10M	<1 yr	Developing FCT 2020

Program Overview

RPP and RPP programs support the Department's drive for modernization and increased lethality. Through the DTEP, the Department is seeking innovative proposals from the following POCs:

DMAP: dmapp@osd.mil

JCTD: jctd@osd.mil

FCT: fct@osd.mil

RPF: rpf@osd.mil

RPP: rpp@osd.mil

RPP: rpp@osd.mil

RPP: rpp@osd.mil

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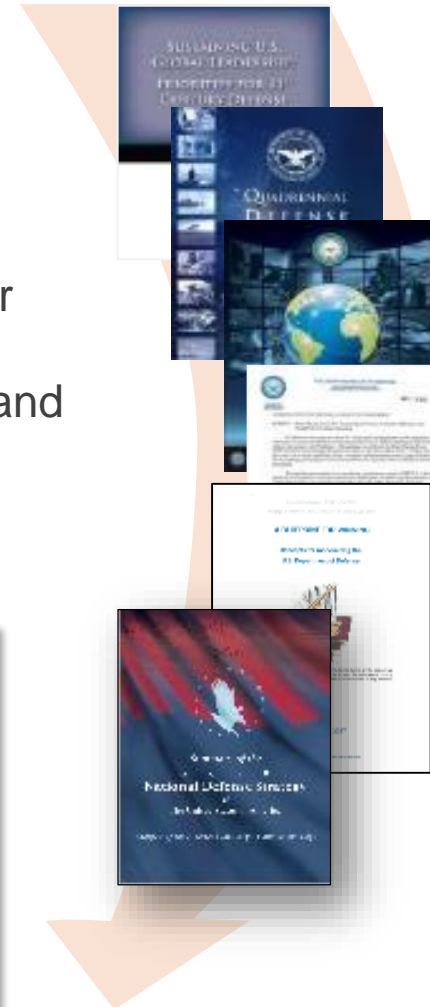
RRTO Selection Process

- **Accept concepts throughout the year from small businesses, traditional and non-traditional industry partners, academia, CCMDs, Services, Laboratories, FFRDCs & UARCs**
- **Streamlined process for funding consideration**
 - Low barrier to entry; quad and white papers provide details for funding decisions
 - Technical review through network of government developers and users
- **Awards made during the year of execution**
- **Execute through partnership with transition offices**

Guiding principles

1. Invest where others do not (seams, cracks, & fissures)
2. Co-funding from other stakeholders
3. Clear transfer/transition path
4. Open to higher risk / higher reward alternatives
5. Advance emerging technology development for the joint Warfighter
6. Mitigate risk towards future S&T development
7. Inform requirements and future acquisition decisions

“We must not accept cumbersome approval chains” (2018 NDS)





Low Cost Project Pipeline

- **Proposals for low cost projects (<\$1M) will be evaluated and approved through an accelerated process**
 - Same call for proposals
 - Same fundamental steps
 - Same funding decision authority
- **Uses O6/GS-15 Small Group Review to develop funding recommendations, rather than the Prototyping Senior Steering Group**
- **Participants include the DoD/Interagency prototyping community of interest, including the Military Services, CCMDs, Joint Staff, and ADs**
- **Small Group Review will meet quarterly to:**
 - Deconflict proposals from ongoing work
 - Collect inputs on technical feasibility & programmatic rigor
 - Collect inputs on benefit to the warfighter
 - Monthly DD-DTEP funding decision for selected low-cost projects

Low Cost Pipeline collects stakeholder inputs for real-time decision making



Demonstration/Experimentation Venues



High Speed, Electronic Keel Marine Testbed

Stiletto is a maritime technology demonstration platform with an “electronic keel” that enables rapid integration, demonstration, and experimentation with new technologies. The 88-foot experimental boat provides an authentic military maritime platform with easy access for small businesses and non-traditional performers. In FY 2019, Stiletto demonstrated 87 technologies, including systems from 17 small businesses.



Multi-Intelligence & ISR Technology Demonstration Venue

Thunderstorm is an enduring technology demonstration venue open to a wide range of participants, including small businesses, military, and the interagency. New technologies can be integrated, evaluated, and assessed under real world conditions with scripted and unscripted scenarios. In FY 2019, Thunderstorm demonstrated 99 technologies, including systems from 44 small businesses.



Joint Interagency Field Experimentation (JIFX)

JIFX demonstrates and evaluates new technologies related to Department of Defense research in an operational field environment. JIFX also provides the operational community an opportunity to experiment with these technologies to better understand their capabilities and how to use them. Together this creates a collaborative, boundary-pushing environment to explore the implications and applications of emerging technology. In FY 2019, JIFX demonstrated 52 technologies, including systems from 14 small businesses.



Simulation Experiments (SIMEX)

Simulation Experiments (SIMEX) provide a high-fidelity environment to develop operational concepts for emerging technologies. Sensors, weapon systems, kill chains, and command & control with operational users are accurately modeled and simulated by MITRE's National Security Experimentation Lab, providing data-driven results. 58 SIMEX events have been conducted since 2001, including UAS/counter-UAS, directed energy weapons, cyber warfare, and autonomous systems.



Innovation Outreach



■ Mission

- Leverage innovative commercial technologies relevant to the needs of the government, thereby reducing acquisition time, cost and risk
- Promote competition and field affordable capabilities by taking advantage of commercial R&D investments
- Engage with emerging nontraditional technology companies

■ Addresses capability gaps through non-traditional sources

- Low barrier to entry
- 100 word description of technology
- Selected companies present 25 minute technical overview to a government audience
- Risk-free, non-attributable service provided by RRTO

2019 Numbers

- 836 Companies applied to participate
- 94 Companies presented to the requesting government audience
- 38 companies in follow-on discussions / negotiations

Addressing Government Needs With Innovative Technologies From Non-traditional Sources