The U.S. Army Research, Development and Engineering Command

Army International Engagement
2017 POST

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Acting Secretary of the Army
Mr. Robert Speer

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Ms. Stephanie Easter

Deputy Assistant Secretary of the Army
(Research & Technology)
Dr. Thomas Russell

74%*
Army Materiel Command

Research, Development & Engineering Command

Army Research Laboratory

8%*
U.S. Army Medical Command

Army Medical Research & Materiel Command

Research Development & Engineering Centers

8%*
U.S. Army Corps of Engineers

Engineer Research & Development Center

8%*
U.S. Army Space & Missile Defense Command

Space & Missile Defense Command Technical Center

3%*
HQDA, G-1 Personnel

2%*
U.S. Army Research Institute for the Behavioral and Social Sciences

* Percent of S&T core program executing - PB17
RDECOM...

- Executes 74% the Army S&T budget
- Employs over 13,800 civilians, direct contractors and military, 11,000+ of which are scientists and engineers
- Has over 515 active CRADA agreements with industry and academia
- Supports life-cycle engineering
- Provides an integrated life-cycle resource for the development of new systems and the life extension of legacy systems

**Vision**
Provide innovative research, development and engineering to produce capabilities for decisive overmatch to the Army against the complexities of the current and future operating environments in support of the Joint Warfighter and the Nation.

**Mission**
To be the Army’s enabling command in the development and delivery of capabilities that empower, unburden, and protect the Warfighter.
The RDECOM Business Model

Engineering throughout the lifecycle is critical.
Army Priorities

Focusing on “Game Changing” technology to provide Decisive Overmatch on Future Battlefields

**Army Big 6+1 Capabilities**

A. Future Vertical Lift  
B. Combat Vehicles  
C. Cross Domain Fires  
D. Advance Protection  
E. Expeditionary Mission Command / Cyber Electromagnetic  
F. Robotics and Autonomous Systems (RAS)  
**With a Cross Cutting Capability (+1) of:**  
G. Soldier / Team Performance and Overmatch

**Army Modernization Challenges**

A. Force Protection  
B. Ease Overburden  
C. Timely Mission Command and Tactical Intelligence  
D. Reduce Logistics Burden  
E. Create Operational Overmatch  
F. Achieve Operational Maneuverability  
G. Operate in an CBNRE environment  
H. Early Detection of Traumatic Brain Injury  
I. Improve Operational Energy  
J. Improve Individual and Team training  
K. Reduce Lifecycle Cost

**RDECOM Guidance From CSA**

A. Autonomy  
B. Megacities  
C. Subterranean  
D. Cyber  
E. Soldier Performance and Human Operations
Supporting the Army’s Priorities

**ARMAMENTS**
Research, Development and Engineering Center (ARDEC)
- Fuse and Precision Armament Technology
- Cross Domain Fires

**AVIATION AND MISSILE**
Research, Development and Engineering Center (AMRDEC)
- Counter UAS
- Visualization
- Anti-Access / Area Denial
- Missile Defense

**TANK AUTOMOTIVE**
Research, Development and Engineering Center (TARDEC)
- Robotics / Autonomous Systems
- Combat Vehicles
- Advanced Protection System

**ARMY RESEARCH LABORATORY (ARL)**
- Advance Computing and Big Data
- Additive Manufacturing
- Nanotechnology

**COMMUNICATIONS-ELECTRONICS**
Research, Development and Engineering Center (CERDEC)
- Network
- Prioritize Position Navigation and Timing (PNT)

**EDGEOOOD, CHEMICAL BIOLOGICAL CENTER (ECBC)**
- Operation in CBRNE environment

**NATICK SOLDIER**
Research, Development and Engineering Center (NSRDEC)
- Soldier Performance Optimization
- Biological Technology
- Neuro-cognition

Delivering capabilities for the Army, joint warfighters, our Nation, and our Allies
Where We Are – International

Driving innovation around the world with our allies and partners
ESEP is a professional development exchange program that provides career-broadening work assignments for U.S. government scientists and engineers in foreign defense establishments.

GOALS
• Foster international collaboration and cooperation, build relationships, and leverage limited resources by avoiding duplication of research efforts between nations

OBJECTIVES
• Enhance bilateral RDT&E efforts
• Promotes future International and Bilateral collaborative efforts through harmonization, interoperability, and standardization
• Establish/continue valuable relationships/contacts in the R&D community
Foreign Technology Assessment Support

The Foreign Technology Assessment Support Program enables the continued identification, acquisition, and integration of foreign technology solutions into U.S. Army programs.

The program provides funding to assess foreign products/technologies at TRL 1-6 which may offer a unique and/or state-of-the-art Science & Technology program opportunity.

Products/technologies should provide the U.S. Army a chance to accelerate the development of a needed capability.

Successful FTAS projects have an opportunity to transition into CWP, FCT or ManTech Programs

Program Facts
• Open to Foreign Industry and Academia
• Open to all of U.S. Army
• One year projects; $150K per project

FY18 Cycle

Solicit FTAS Proposals
Jul – Sep 2017

RDECOM IC&E and Army STs Evaluate Proposals
Oct – Dec 2017

Distribute Funds & Begin Projects
Mar 2018

DASA(RT) Final Selections
Feb 2018
Foreign Comparative Testing

**FY18 Call for Proposals**
- **23 Nov 2016 – 17 March 2017**

**Selection Considerations:**
- **OSD**
  - OSD Focus Areas / Priorities
  - Joint Application
  - Long Term Value
  - Cost Avoidance

- **U.S. Army**
  - Procurement Strategy
  - Program Office Support / Endorsement
  - Risk (Cost/Schedule/Performance)
  - Warfighting Challenges Alignment

**Typical Project Scope:**
- OSD Funds 10 – 12 new projects / year
- $600-800K/yr w/ an 18-24m duration
- TRL 7 is the average for all active OSD projects
- Army: 11 active programs with seven countries; Total OSD commitment $14M

**U.S. Army FCT POC:** Mark C. Hassler II; mark.c.hassler.civ@mail.mil; 410-278-8591
<table>
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<tr>
<th>Project</th>
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| Aerial Delivery Improvements for Underwater Mines   | • Demonstrate a Joint Direct Attack Munition (JDAM) compatible wing kit for aerial delivery of Naval underwater mines  
• Provides a low-cost upgrade to enable accurate emplacement of legacy mines at significantly greater ranges |
| Airborne Lean Services Architecture                 | • Evaluate software that uses a services oriented architecture based on published open standards to support Air Force Special Operations Command air-to-ground networks  
• Enables affordable, flexible, and dynamic systems interoperability, automation, and security within and between tactical and operational nodes and platforms |
| Compact High Power Radio Frequency (HPRF) Technology for Vehicle/Vessel Stopping | • Test commercial-off-the-shelf magnetron microwave tube, solid-state power modulator, and RF antenna technology with reduced size, weight, and power (SWaP) for military HPRF applications  
• Reduces acquisition program timeline for delivering a new non-lethal, standoff, vehicle & vessel stopping capability |
| Evaluation of Towed Jumper Release System           | • Test an emergency parachute system for airborne static-line operations  
• Mitigates ‘towed jumper’ scenarios, where an airborne soldier’s parachute system malfunctions and is dragged behind an aircraft often resulting in serious injury or death |
Win in a Complex World
Conceptualizing 2040 & Beyond: Materiel Solutions

Mega City
Dense Urban Area

Initiation or Annihilation of Nucleation Centers
Near-Peer Competitors

State Actors
Non-State Actors

Unmanned Ground Vehicle
Manned Ground Vehicle

C-13 with LADAR/ISR/eSWIR/ISR/DEW/Counter UAS
Unattended Ground Sensors (UGS)

Missile Defense with Long Range Precision Fires
Future Vertical Lift with Increased Speed and Efficiency

SCIL with Self-sustaining Additive Manufacturing
SPIDER with Mounted PNT/Active Denial/DEW/Concealment/Deception

Unmanned Ground Vehicle

Big Data with Command Control

Water From Air System

Sea Train
Drone with Advanced Battery Life

Anti-Access
Joint Seabasing with DEW/ FACE/JCA

Rapid Network Mapping/Mesh Network
Anti-Access/Area Denial

Sea Sensor (Subterranean)

Sea Sensor (Subterranean)

Underground Facilities (Subterranean)

Unmanned Ground Vehicle

Stingray Defense System with High Energy Laser/Long Range Precision

Multirole UAV with Autonomous Resupply (CAS)

Joint Seabasing with DEW/ FACE/JCA

NGO

SPIDER with Mounted PNT/Active Denial/DEW/Concealment/Deception

JTF

Rapid Port Extension

Sea Train

Manned Ground Vehicle

Unmanned Ground Vehicle

Stingray Defense System with High Energy Laser/Long Range Precision

BIG DATA with Command Control

Water From Air System

Sea Train
Drone with Advanced Battery Life

Anti-Access
Joint Seabasing with DEW/ FACE/JCA