



Module 1 - Lesson 102

RDT&E Activities

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Overview/Objectives

- **The intent of lesson 102 is to provide instruction on:**
 - Levels of RDT&E Activity
 - Activities used to conduct RDT&E
 - RDT&E as an Appropriation
 - Colors of Money
 - Joint Concept Technology Demonstrations (JCTDs)
 - Technology Transfer and Cooperative Research and Development Agreements (CRADAs)
 - Government Purpose Use Rights (GPUR)



Levels of RDT&E Activity

- **Basic Research (Budget Activity 1/BA1)**
 - Systematic study directed toward a greater understanding of the fundamental aspects of phenomena and/or observable facts without specific applications toward processes or products
- **Applied Research (BA2)**
 - Systematic study to gain knowledge necessary to determine the means by which a recognized and specific need may be met
- **Advanced Technology Development (BA3)**
 - Includes all efforts that have moved into the development and integration of hardware for field experiments and tests
- **Demonstration and Validation (BA4)**
 - Includes all efforts to evaluate integrated technologies in a realistic operating environment to assess the performance or cost reduction potential of the advanced technology

USTRANSCOM RDT&E Has BA4 Level Funding



Levels of RDT&E Activity

- **Engineering and Manufacturing Development (BA5)**
 - Includes projects in engineering and manufacturing development for Service use which have not received approval for full rate production
- **RDT&E Management Support (BA6)**
 - Includes R&D efforts directed toward support of installation operations required for general R&D use. This includes test ranges; military construction; maintenance support of laboratories; operations and maintenance of test aircraft and ships; and studies and analysis in support of a R&D program
- **Operational System Development (BA7)**
 - Includes projects in support of development acquisition programs or upgrades still in engineering and manufacturing development. These projects have received Defense Acquisition Board (DAB) or other approval for production or for which production funds have been included in the DOD budget submission for the budget or subsequent fiscal year



Activities Used to Conduct RDT&E

- **USTRANSCOM funded RDT&E projects address JDDE Gaps with defined deliverables, close cost estimates, and schedule goals to serve a user**
- **CRADAs**
 - Industry provides resources; government provides the development environment
 - Managed by Command's Office of Research and Technology Applications (ORTA)
- **JCTDs are demonstrations of mature technologies in a joint operational environment**
 - Deputy Assistant Secretary of Defense Enabling Capabilities & Prototyping (DASD/EC&P) program
 - USTRANSCOM collaboratively funds JDDE-related JCTDs
 - Joint Urgent/Emergent Operational Needs fall under DASD(EC&P) umbrella (do not rely on USTRANSCOM funds for support)
- **Other programs not relying on USTRANSCOM RDT&E funds include:**
 - Coalition Warfare Program: OSD program that relies on coalition partner contributions to mutually pursue technology development
 - Joint Test & Evaluation: OSD program which funds the development of joint tactics, techniques & procedures and/or Concept of Operations
 - Rapid Innovation Fund: Congressional special interest program designed to support the maturation of small business innovation



RDT&E is an Appropriation

- **Funded by the RDT&E Congressional appropriation**
 - Air Force example: “3600 money”
- **Distinct from Operations and Maintenance (O&M), Procurement, and Military Construction appropriations**
 - Different purposes, lifespan, and management
- **Other principal users of DOD RDT&E are Services’ “materiel commands”, laboratories, system program offices (SPOs), the Defense Advanced Research Projects Agency (DARPA), and the National Science Foundation (NSF)**
- **National Laboratories including *Oak Ridge, Sandia, Lawrence Livermore, and Los Alamos* are major users of RDT&E outside of DOD**
- **TWCF are revolving funds (used in some instances to transition Command IT-related RDT&E technologies)**



“Color” of Money Explanation

- **TWCF Capital:**
 - Source is fee charged to customers of the Defense Transportation System (DTS)
 - Capital is used for materiel purchases over \$250K (capital investments)
- **TWCF Operating:**
 - Source is fee charged to customers of the DTS
 - Operating is used for funding of management, oversight, consumable materials, or capital purchases under \$250K
- **RDT&E**
 - Source is Congressional appropriation
 - Used for investigation, scale-up, and integration of new capabilities
- **Operations and Maintenance (O&M)**
 - Source is Congressional appropriation
 - Funding of management, oversight, consumable materials, or capital purchases, at the operator level, to conduct daily operations



JCTD Program

- **Addresses important military need with Mature Technology & Innovative Concepts**
- **Provides a technical solution with tailored, demonstrated ops concepts/TTPs**
- **Evaluates solution in field demonstrations by warfighters**
- **Joint, often multi-service, often combined/coalition**
- **Multiple Players across DOD**
 - Developer Military Service/Agency: Technical Manager (TM)
 - Sponsoring CCMD: Operational Manager (OM)
 - Lead Military Service/Agency: Transition Manager (XM)
- **RAPID: 1 to 3 years to Final Demonstration/Prototype**
 - Up to 2 Years of support for Residuals
 - Multiple transition possibilities (GSA Schedule, Program of Record, etc.)
- **Multiple funding sources**
 - DASD(EC&P) typically provides up to 50% funding
 - Other partners (e.g. Services, USTRANSCOM, etc.) contribute remaining funds
- **Transformational joint and coalition enhancements emphasized**



Technology Transfer and the CRADA

- **USTRANSCOM acts as a federal laboratory for Technology Transfer authority, including CRADAs and Education Partnership Agreements**
- **CRADAs are a tool for USTRANSCOM to access external expertise for concept exploration--BEFORE any formal acquisition decision is made**
- **Flexible and fast; start collaborative work in days or weeks, not years**
- **Not a procurement contract or grant (*no funding to external party*); thus exempt from the Federal Acquisition Regulation and Defense Federal Acquisition Regulation Supplement**
- **USTRANSCOM can obtain rights in inventions, patents, and intellectual property**
- **Trade secret and commercial/financial information are protected from disclosure under the Freedom of Information Act**
- **The USTRANSCOM Office of Research and Technology Applications facilitates startup and operation of CRADAs, including finding industrial/academic partners, assisting in experiment design and intellectual property management, and providing technical advice**



CRADAs in Practice

- **A legally-binding agreement signed by the Lab Director (TCDC) and external parties**
- **Partners can be any non-federal parties, with any number of federal agencies**
 - Contractors and industrial organizations
 - Academia or individuals, non-profits
 - Units of state or local government
 - Public and private foundations
- **How it works:**
 - USTRANSCOM can provide any resource to a CRADA--*except funding*
 - Collaborators (outside parties) can provide *any resources* and may also provide funding or fees (to cover use of government facilities)
 - Research topics are negotiated and may be modified; the work is collaborative
 - Non-federal parties obtain access to our experts, data, facilities, and challenges
 - USTRANSCOM obtains access to experts and new technologies to better understand the value of potential new capabilities
 - Leverage thousands of engineering hours to explore Concept of Operations, risks, Return on Investment, and Tactics, Techniques and Procedures
- **USTRANSCOM examples: hybrid airships; satellite RFID; wind farms vs. radars;**



Government Purpose Use Rights (GPUR)

- **Organizations receiving USTRANSCOM RDT&E funding should apply appropriate internal controls and contractual actions to impose and preserve GPUR for new intellectual property (inventions, copyrights and patents) developed in-house and especially through contracted work**
- **Government organizations receiving USTRANSCOM RDT&E funds for development work via contracts with non-federal parties will verify appropriate FAR and/or DFAR clauses, CLINs or CDRLs, and other pertinent contractual language and tables are included in contracts to appropriately protect government use rights in technical data, computer software and computer software documentation**
- **Minimum language for contracts or subcontracts using USTRANSCOM RDT&E funds is as follows:**
 - "The Government obtains under this contract "unlimited rights" to all technical data and non-commercial computer software, software source code, computer software documentation, enhancement, technical data, and similar non-commercial data developed exclusively at Government expense and delivered to the Government under this contract. "Unlimited rights" means rights to use, modify, reproduce, release, perform, display or disclose in whole or in part, in any manner and for any purpose whatsoever, and to have the ability to authorize others to do so. See DFARS 252.227-7013 and DFARS 252.227-7014 applicable to this contract."



Summary

- **You should now have a fundamental understanding of:**
 - Levels of RDT&E Activity
 - Activities used to Conduct RDT&E
 - RDT&E as an appropriation
 - Colors of Money
 - JCTD Structure
 - CRADA Fundamentals
 - Government Purpose Use Rights

Questions or Additional Information, Call the RDT&E
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