SOLIC

OFFICE OF THE SECRETARY OF DEFENSE
Assistant Secretary of Defense for
Special Operations and Low Intensity Conflict

Acquiring with Allies

18 May 2022

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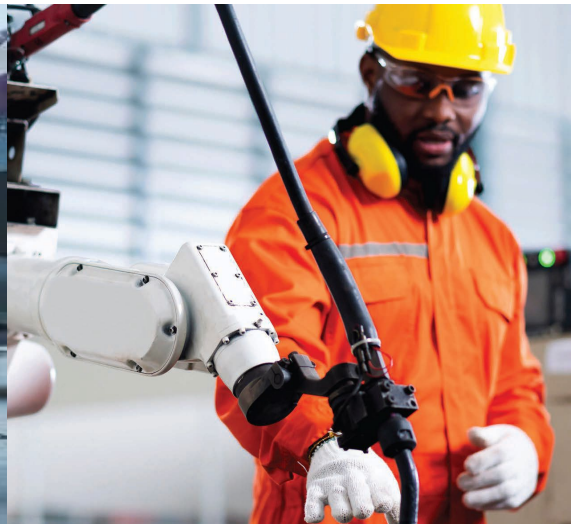
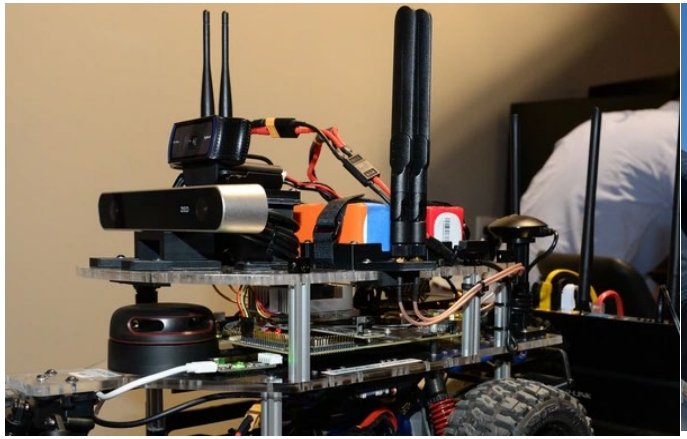
Overview

- **New National Defense Strategy (NDS 22)**
  - Outlines Department Priorities
  - Establishes Guidance for changes
- **FY23 Budget**
  - Supports and Implements new NDS
  - Advances Our Priorities
  - Funds the Joint Force we need
- **Acquisition Guidance from the NDS**
  - Modernizing Regulatory Frameworks
  - Improving Exportability
  - Leveraging Rapid Experimentation
- **ASD(SO/LIC)**
  - International Bi-Lat Expansion
  - International Prize Challenges





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National Defense Strategy (NDS 22)

- **Fully Integrates:**
  - Nuclear Posture Review (NPR)
  - Missile Defense Review (MDR)
- **Defense Priorities:**
  - Defending the Homeland
  - Deterring strategic attacks against U.S., Allies and Partners
  - Deterring Aggression
  - Building a resilient Joint Force and Defense ecosystem
- **DoD will advance our goals 3 ways:**
  - Integrated Deterrence
  - Campaigning
  - Building Enduring Advantages
- **UNCLASS NDS**

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FY 2023 Presidents Budget Request

Integrated Deterrence ($276B)

- **Major Weapons Systems ($101.9B)**
  - $56.5B Request to Advance Air Power
  - $40.8B in Sea Power
  - $12.6B Land Power
- **Nuclear Enterprise Modernization ($34.4B)**
  - Fully funds the Columbia-class ballistic missile submarine
  - Ramps-up production funding for the B-21 bomber
- **Missile Defeat and Defense ($24.7B)**
  - Next Gen Interceptors
- **Long Range Fires ($7.2B)**
  - Field Hypersonics and High Survivable Subsonic Weapons
- **Space and Space Based Systems ($27.6B)**
  - $4.7 billion to new Resilient Missile Warning/Tracking
  - $1.8 billion for Position, Navigation, and Timing funds
- **Cyberspace Activities ($11.2B)**

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FY 2023 Presidents Budget Request

Campaigning

- **Indo-Pacific Investments**
  - $6.1B in integrated fires, missile warning and tracking
  - Multinational information sharing, training, and experimentation.
- **Europe: Countering Russian Aggression**
  - Next Gen Interceptors
  - $892 million for the Defense of Guam against China
  - $4.2B evolving threat and strategic environment
  - $0.9B for Security Cooperation programs with allies and partners
- **Readiness Investments**
  - $134.7B Strategic readiness and preparedness of the Joint Force

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FY 2023 Presidents Budget Request

Building Enduring Advantages

- **Accountable Leadership**
  - Diversity, Equity and Inclusion
- **Cultivating the Workforce We Need**
  - Grow our Talent
  - 4.6% pay raise for Military and Civilians
  - Supporting $15 minimum wage
- **Innovation and Modernization**
  - $130.7B RDT&E (9.5% over FY22 enacted)
  - $16.5B Science and Technology
  - $250M 5G
- **Defense Industrial Base & Supply Chain**
  - $3.3B Microelectronics
  - $48M Casting and Forging
  - $43M Batteries and Energy Storage
  - $605M Kinetic Capabilities

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NDS 22
Acquisition Guidance

- **Modernizing Regulatory Frameworks**
  - Foreign Military Sales
  - Grant Assistance
  - Interoperability Standards for Partners and Allies
- **Improving Exportability**
  - Planning for Exportability Early
  - Arms Export Process
  - Modernizing Finance Options for Security Cooperation
  - Extend Finance terms to align with Partner Nation Budget Cycles
- **Defense Industrial Base Focus Areas:**
  - Federally Funded Research and Development Centers
  - University and Academic Research Centers
  - Strategic Capital Providers
- **Leveraging Rapid Experimentation**
  - Deeper Integration with Traditional and Nontraditional Partners

IRREGULAR WARFARE TECHNICAL SUPPORT DIRECTORATE

MISSION

Vision:

Identify requirements and provide solutions to warfighters, first responders, and other front-line users as rapidly as possible.

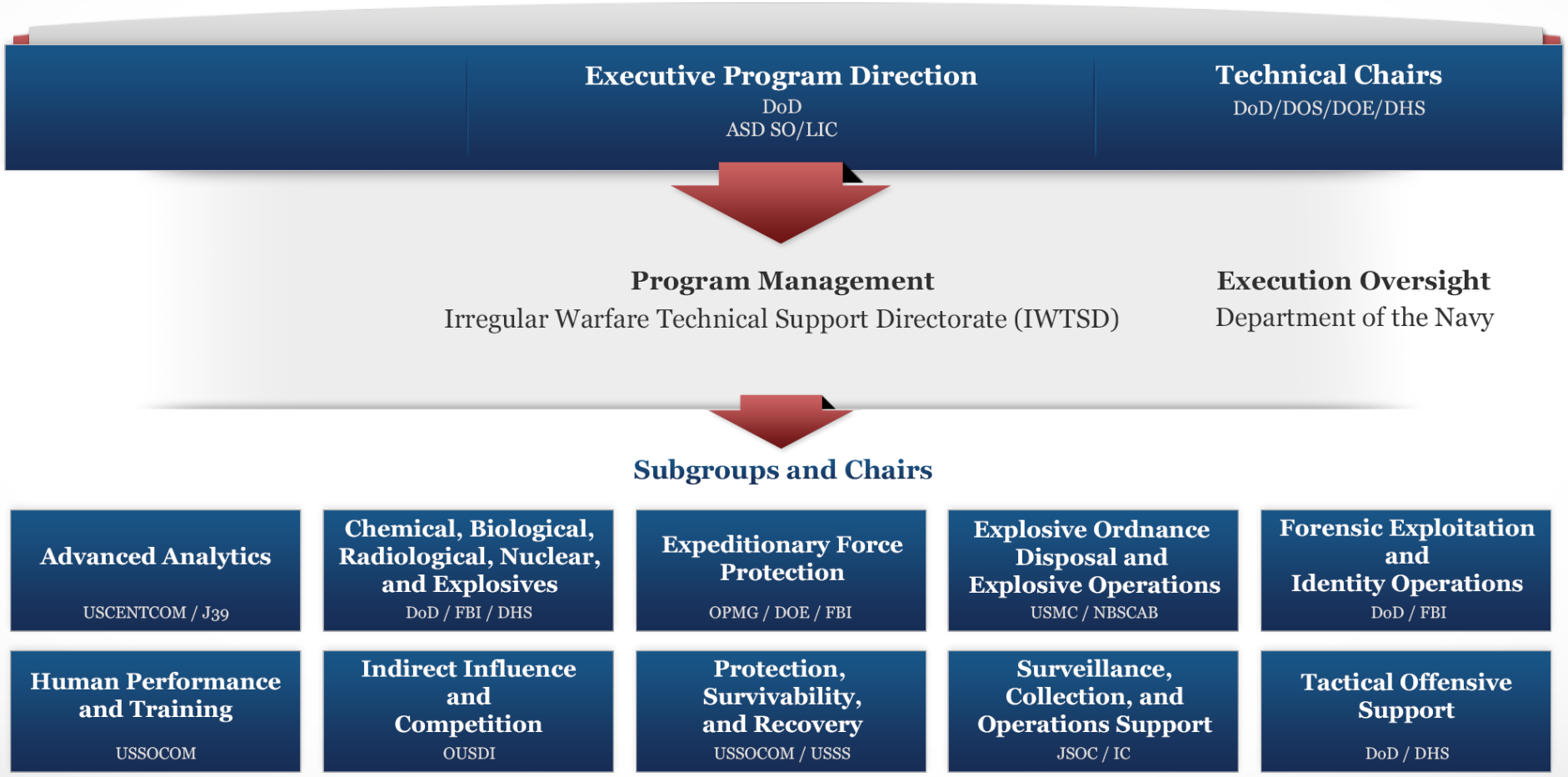
Mission:

To Identify and develop capabilities for DoD to conduct Irregular Warfare against all adversaries, including Great Power competitors and non-state actors, and to deliver those capabilities to DoD components and interagency partners through rapid research and development, advanced studies and technical innovation, and provision of support to U.S. military operations.

Objectives:

- Support the National Defense Strategy and the Annex for Irregular Warfare.
- Provide forums to solicit and collaborate on R&D requirements.
- Rapidly advance technology development, deliver prototypes for operational tests and evaluations, and assist in product transition.
- Promulgate technology & information exchange.
- Influence policy – identify enablers.

ORGANIZATION

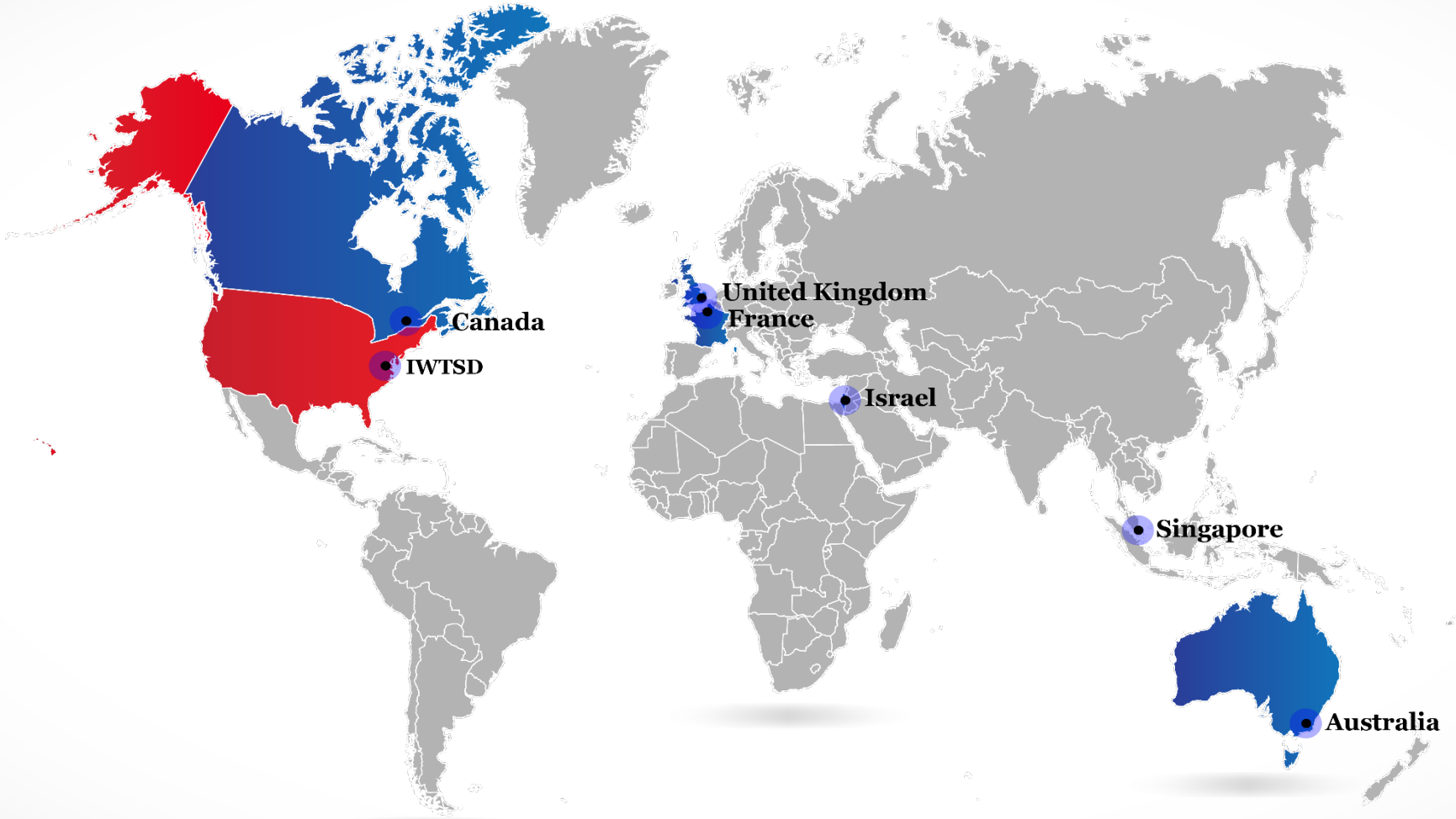


Why International?

- **Experience**: From “The Troubles” in Northern Ireland to the *Intifada* to the Bali attacks, international partners have operational experience in Irregular Warfare
- **Expertise**: Broader technology base and unique facilities
- **Efficient**: 50/50 sharing of resources and information and reduces unnecessary duplication and scientific trial and error
- **Enabler**: Provides regional intelligence and cooperation at working level builds trust and may lead to cooperative future operations

The IWTSD International Program provides significant value, giving us solutions we wouldn’t otherwise have access to, additional money and perspective, and a way to engage with our allies before we fight together on the front lines.

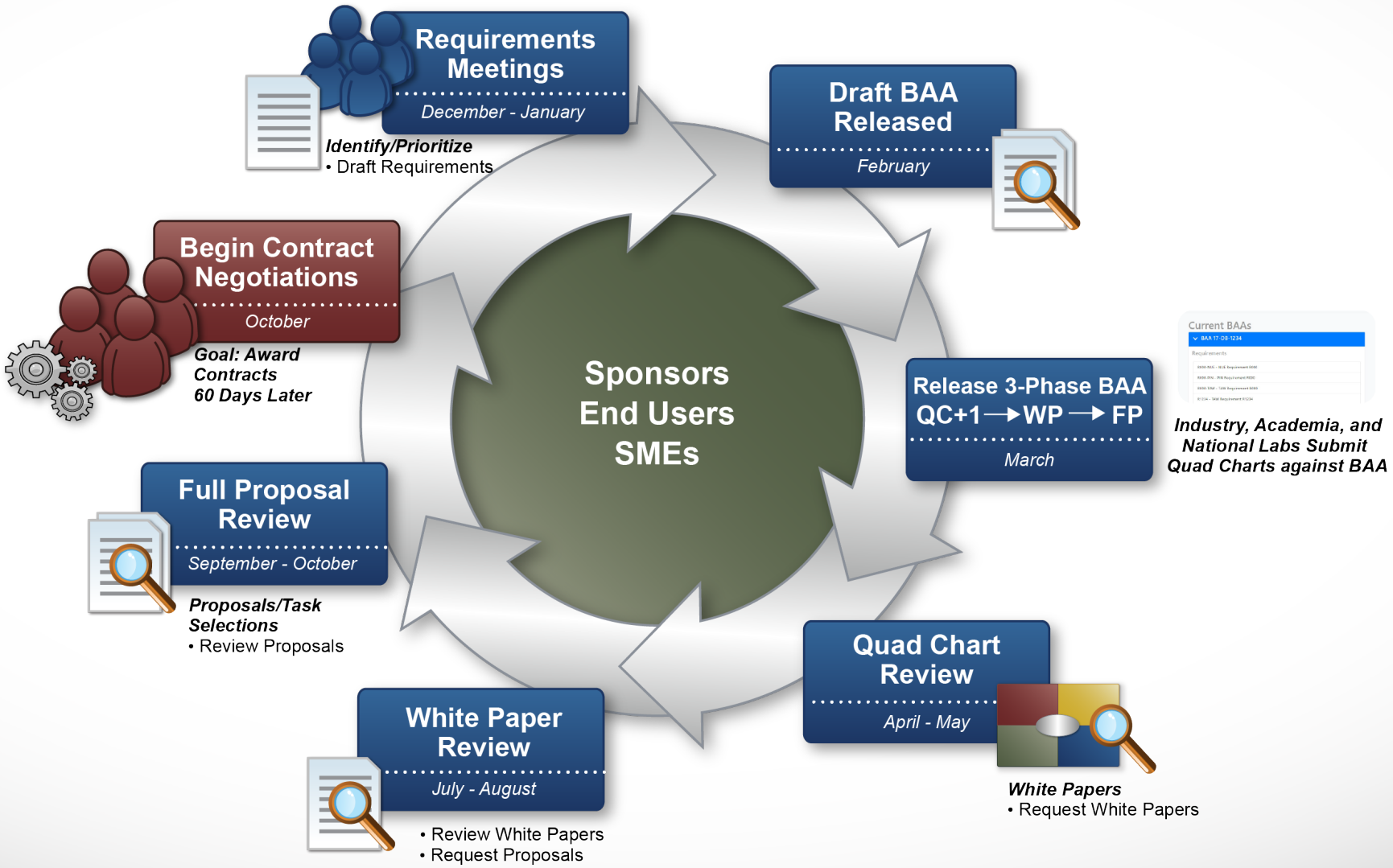
INTERNATIONAL PROGRAM



Australia Canada France Israel Singapore United Kingdom

*Currently in negotiations

TRADITIONAL BUSINESS CYCLE



TECHNOLOGY TRANSITION

- Objective: Affordable, operationally suitable technology in the hands of our users
- An integral part of IWTSD business process
  - Begins with the proposal
  - Continues throughout development
  - Requires periodic deliverables
- Prepares for the unexpected
- Planning assistance provided by IWTSD
- Accelerates prototype to product cycle

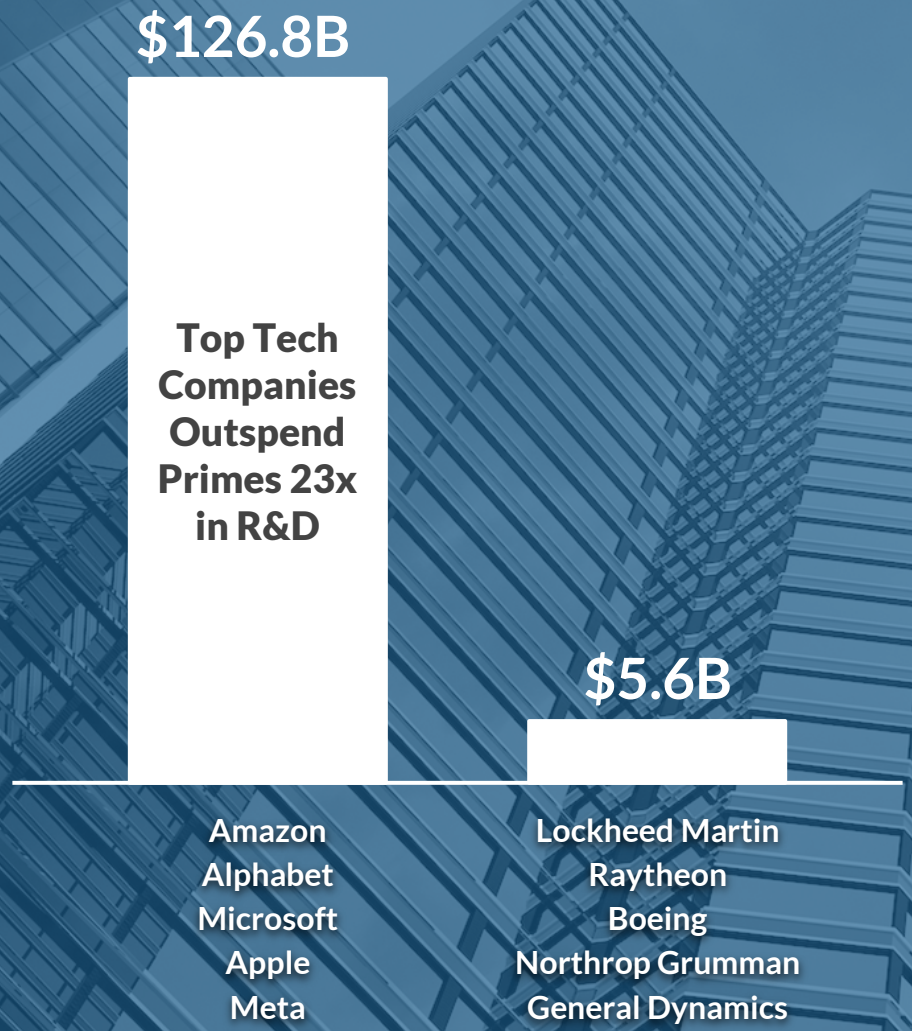
DEFENSE INNOVATION UNIT

DIU Overview to SOFIC

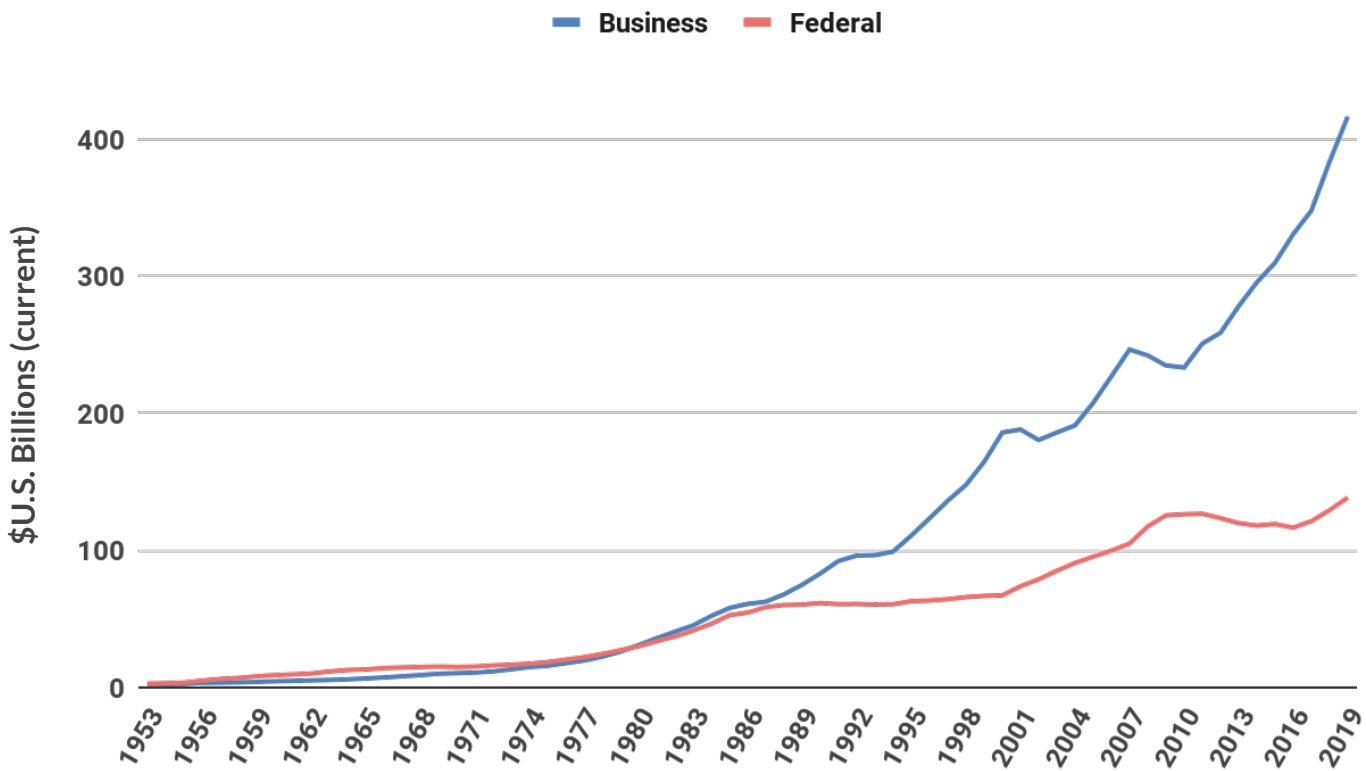
May 18, 2022

Katherine Koleski, Director of Global Partnerships

WHY COMMERCIAL



U.S. R&D Expenditures by Source: 1953 - 2019



Source: National Science Foundation, National Patterns of R&D Resources

CRITICAL TECHNOLOGY AREAS

11 out of the 14 defense modernization priorities are commercial

Emerging Technologies

- Biotechnology
- Quantum Science
- FutureG
- Advanced Materials

Ready for Assimilation

- Trusted AI & Autonomy
- Network System-of-Systems
- Microelectronics
- Space Technologies
- Renewable Energy
- Advanced Computing
- Human Machine Interface
- Cyber*

Defense-Specific

- Directed Energy
- Hypersonics
- Sensing & Cyber

*Not one of the original 14 named critical technologies

CORE DIU MISSION

DIU is a fast-moving, cross-DoD organization focused exclusively on commercial companies to solve national security problems.

Elements of our Mission

Accelerate DoD adoption of commercial technology

Transform Military capacity and capabilities

Strengthen the national security innovation base

Key Differentiators

Unique project lifecycle from curation to transition

Joint force & mandate to scale value across DoD

Broad and deep **integration** into key tech ecosystems

WE DELIVER THE BEST COMMERCIAL TECH TO DOD

DIU facilitates projects between our DoD partners and commercial companies to prototype, transition, and scale advanced technology.

Department of Defense

DIU provides...

- Access to leading commercial technology
- Collaborative prototype process
- Delivery of capabilities in 12-24 months
- Solutions at commercial cost curves

Commercial Companies

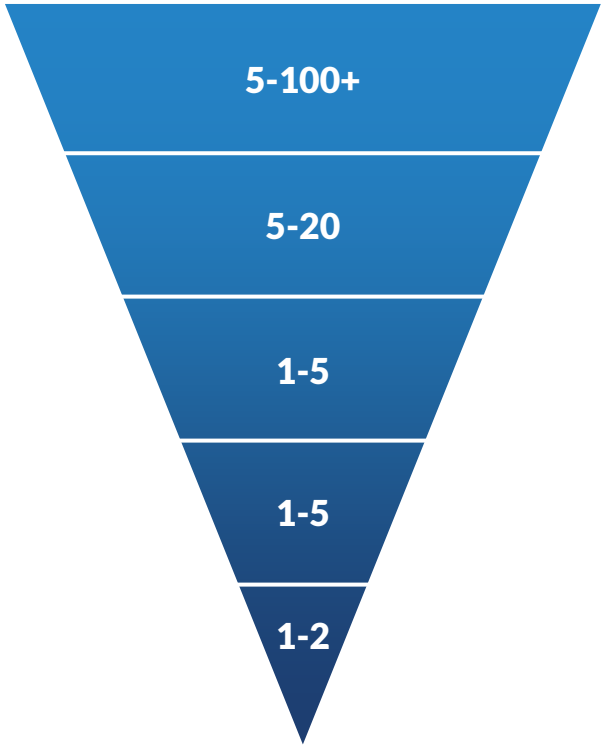
DIU provides...

- Opportunity to solve high-impact national security problems
- Simple process and faster time to award
- Access to large volume defense contracts
- Liaison with DoD partner

UNIQUE PROJECT LIFECYCLE - FAST & COMPETITIVE

Problem Curation & Diligence		• Receive, understand, and evaluate DoD partner problem • Confirm commercial market exists to address problem	
Commercial Solutions Opening (CSO)	**Phase 1**	• Solicit digital proposals in response to a problem statement	~10 business days
	Phase 2	• Evaluate proposals and invite a short list of bidders to pitch	60-90 days to contract award (goal)
	Phase 3	• Select contract awardee/s and negotiate agreement	
Prototyping		• Execute prototype project	12-24 months
Transition		• Award non-competitive follow-on agreement to successful performers • Deliver and scale solution to transition partner/s and beyond	

Approximate Number of Vendors Participating



TECHNOLOGY FOCUS AREAS

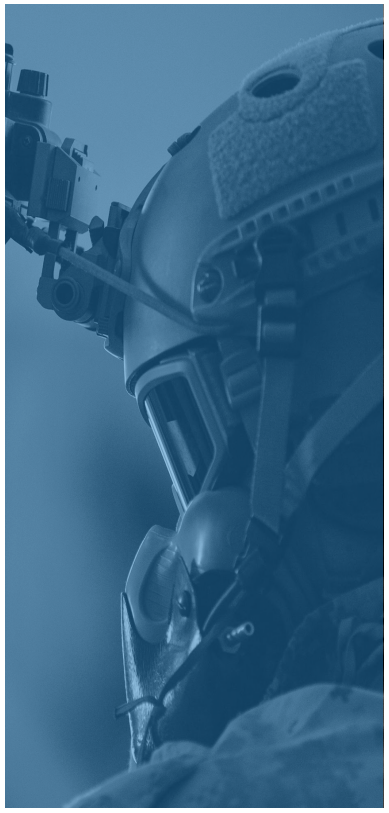
Where the Commercial Sector is in the Lead

AI/ML

Autonomy

Cyber

Energy



Human Systems

Space

PROTOTYPES BY PARTNER

June 2016 - September 2021

Share of Prototype Funding

88%

- OSD & Joint Staff
- Combatant Commands
- Fourth Estate (agencies/other DoD)
- Army
- Marine Corps
- Navy
- Air & Space Forces

12%

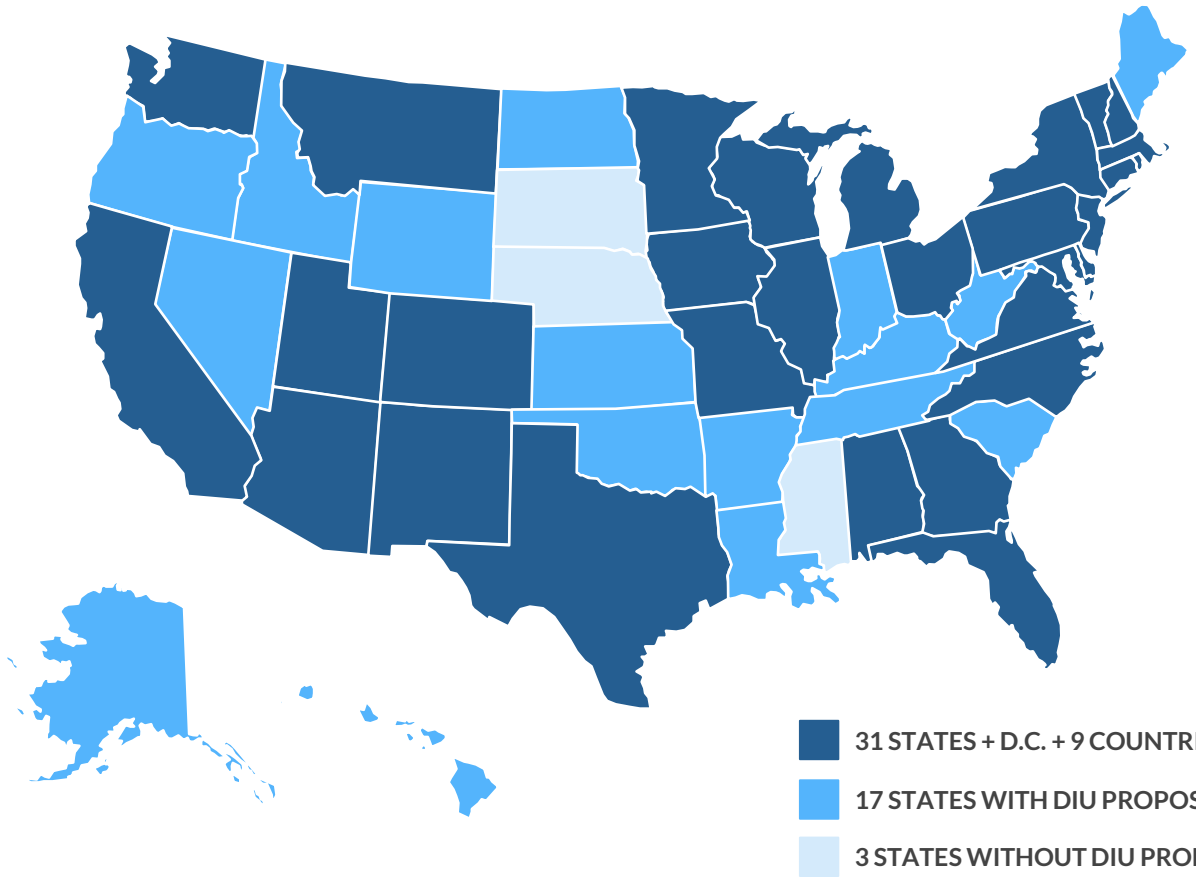
- Defense Innovation Unit

Accelerating Commercial Technology for National Security

STRENGTHEN THE NSIB

Broad & Deep Integration Into Tech Ecosystems

United States Awards by Company Location



31 STATES + D.C. + 9 COUNTRIES WITH DIU AWARDS

17 STATES WITH DIU PROPOSALS ONLY

3 STATES WITHOUT DIU PROPOSALS OR AWARDS

International Awards by Company Location

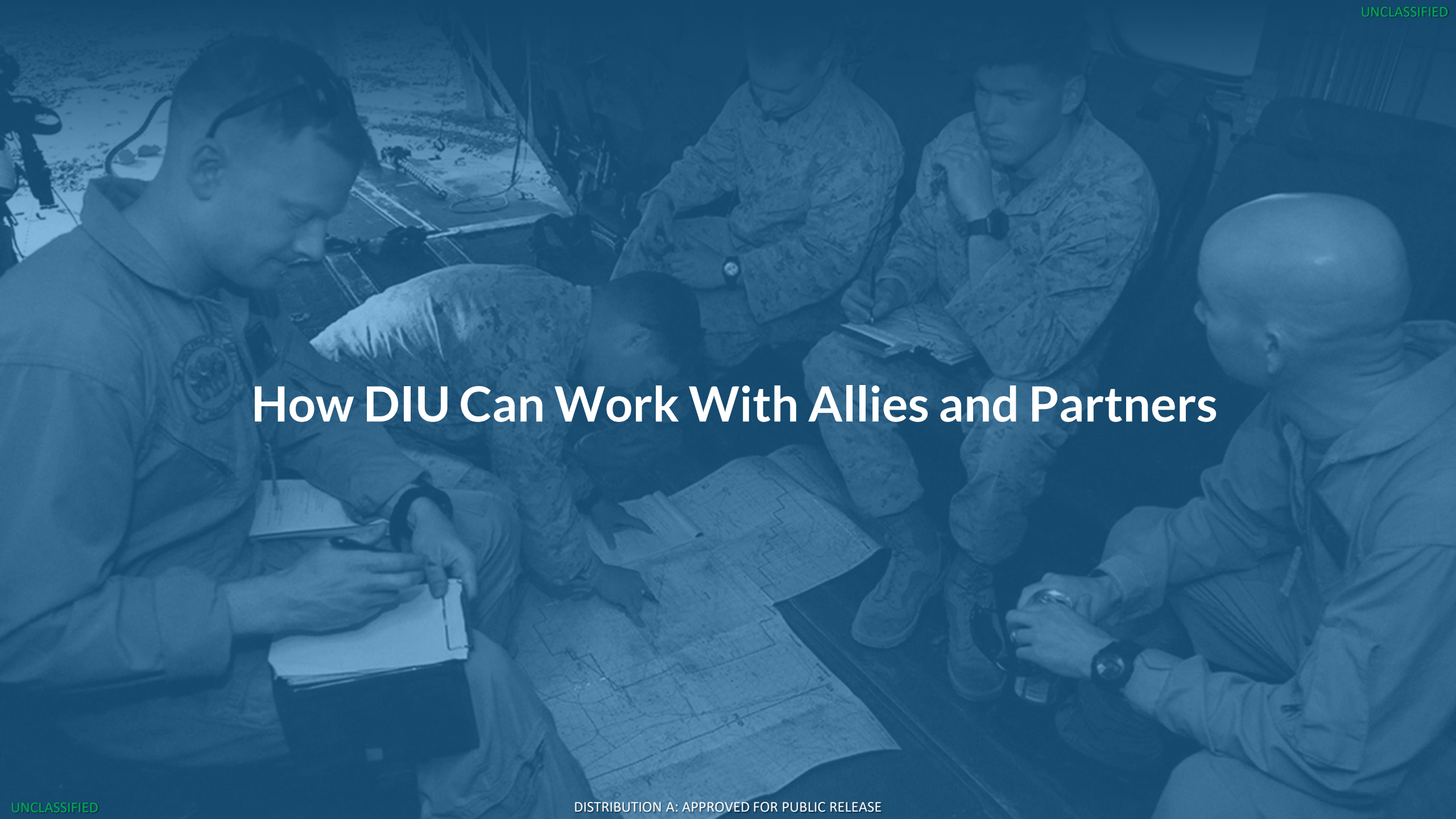
Data shown here represents proposals received and DIU awards made between June 2016 - September 2021. Does not include U.S. Territories.

DIU GENERATING OUTSIZED IMPACT

Expanded Capacity: 75 Ongoing Projects

>$20.1B In private investments leveraged	**60-90 days** Goal: from posting solicitation to vendor(s) on contract	**21%** Increase in vendor submissions in FY21
92 First time DoD vendors	**37** New projects started in FY21	**279** Prototype OT contracts awarded
240 Non-traditional vendors	**45%** Transition rate (FY17-FY22)	**$893M** DoD funds obligated

Most data from June 1, 2016 - September 30, 2021



How DIU Can Work With Allies and Partners

ACCESS BEST TECH SOLUTIONS FROM ALLIED AND PARTNER INNOVATION BASE

17 companies from 9 countries have been awarded DIU contracts.

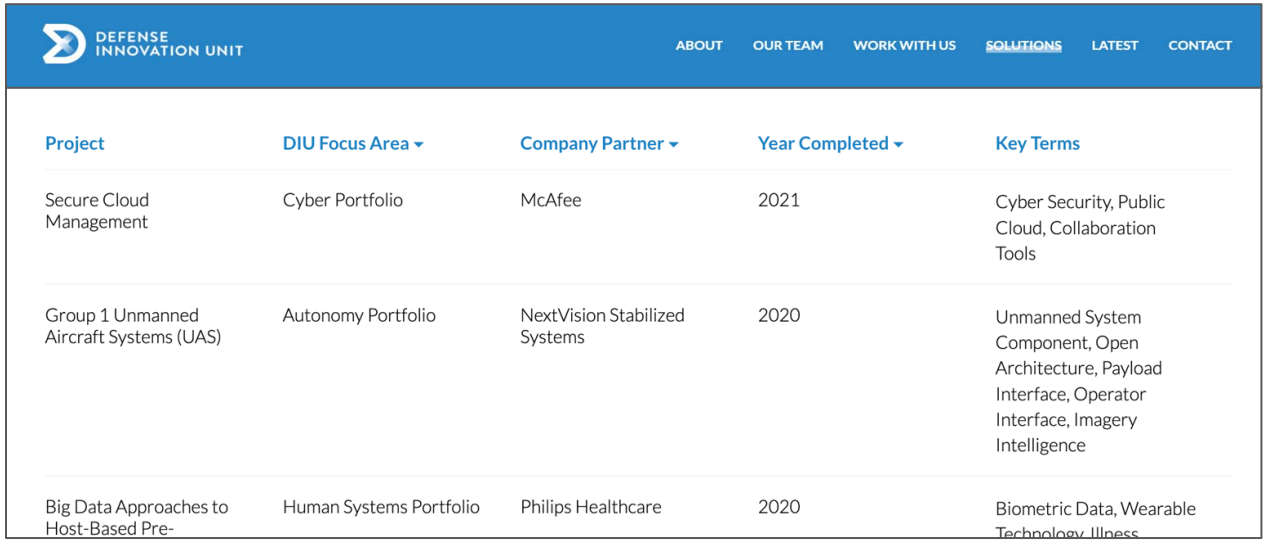
DIU is looking to strengthen ties with the allied and partner industrial base via **foreign companies applying for DIU solicitations.**

International Awards by Company Location

DIU COMMERCIAL SOLUTIONS CATALOG

47 transitioned or successfully completed solutions posted to the DIU Commercial Solutions Catalog.

The DIU Commercial Solutions Catalog is a compilation of both our **successful and transitioned prototypes**. With our DoD partners, we have evaluated, adapted, and tested commercial solutions to address the Department's AI/ML, autonomy, cyber, human systems, and space technology needs.

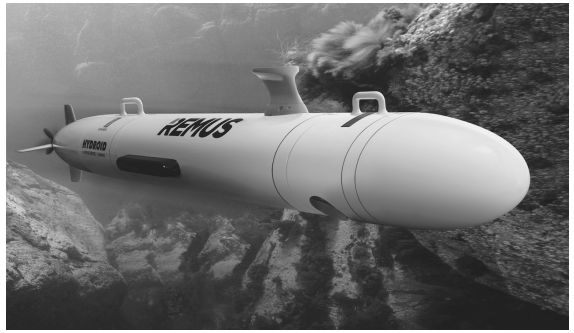


https://www.diu.mil/solutions/portfolio/catalog

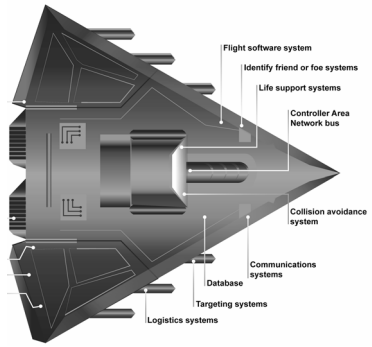
EXAMPLES OF DIU PROVEN CAPABILITIES

Small Drones

Critical Supply Delivery



Unmanned Underwater Vehicles



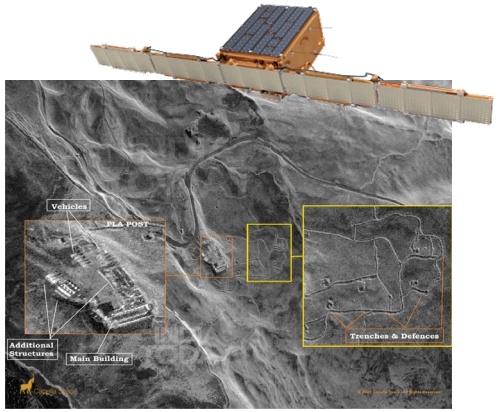
Automated Cyber Vulnerability Remediation

Illness Diagnostic

Unmanned Maritime Surface Vessel

Launch as a Service

Additive Manufacturing



Commercial Satellite Imagery

C-UAS

WORK WITH US

www.diu.mil

Open Solicitations: diu.mil/work-with-us/open-solicitations

CONTACT US

www.diu.mil/contact-DIU

FOLLOW US

Joint Experimentation

Office of the Undersecretary of Defense for Research & Engineering

Ms. Betsy DeLong and Ms. Ayesha Vaid
RDER Portfolio – Resilient Comms

SOFIC 2022

Research & Engineering Mission

Technology Strategy Pillars

- Leverage the United States' incredible technology innovation potential to solve the Department's tough operational, engineering, and mission-focused challenges.
- Set the foundation to attract and build a strong, talented future technical workforce that works in modernized laboratories and test facilities.
- Maximize our asymmetric advantages by partnering with the larger innovation ecosystem, from industry to universities and to laboratories, allies and partners.

Emerging Opportunities

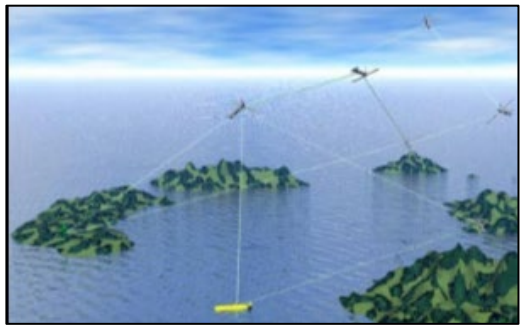
- Biotechnology
- Quantum Science
- FutureG
- Advanced Materials

Effective Adoption Areas

- Trusted AI and Autonomy
- Integrated Network Systems-of-Systems
- Microelectronics
- Space Technology
- Renewable Energy Generation and Storage
- Advanced Computing and Software
- Human-Machine Interfaces

Defense-Specific Areas

- Directed Energy
- Hypersonics
- Integrated Sensing and Cyber



OUSD(R&E) - Advanced Capabilities

Mission: Deliver Joint Warfighting Concepts (JWCs) to Prototype Capabilities; and Transition the Valley of Death

Roles:

- Develop and support future Warfighting concepts and integrated architectures
- Close capability gaps in support of defense modernization
- Strengthen engineering authorities and policies
- Conduct continuous stakeholder engagement to support development and delivery of capability to the Joint force, Joint Warfighter, and Combatant Commanders
- Ensure test range infrastructure and facilities support current and future needs

Prototypes & Experiments

- Deliver leap-ahead and disruptive technologies
- Execute allied prototyping initiative projects
- Close capability gaps

Engineering

- Propagate engineering best practices
- Solve engineering problems
- Connect the engineering community

Test Resource Management Center

- Provide robust and flexible testing & evaluation capabilities
- Align test & modernization goals
- Ensure ranges are ready to test new capabilities as they emerge

OUSD(R&E) AC - Prototypes & Experiments

Mission: Identify, develop, and demonstrate innovative technical concepts to address defined national security challenges faced by the DoD, Joint Force, Services, and Combatant Commands.

Characteristics of P&E Projects

- Span ***Joint mission/priority areas*** and ***DoD modernization priorities***
- ***In-year selection*** process for greater agility and responsiveness
- Informs requirements development
- Co-sponsors (***co-funding***) are critical to success
- Emphasize ***user involvement*** with technology demonstration and experimentation
- Most provide ***residual capabilities*** for the Warfighter
- Include ***transition*** planning from the start

Stratospheric Platforms, persistent flight

Automated Construction, 3-D printed buildings

Resilient Energy, Development and Training

Role of Experimentation in the DoD

- Defense experiments provide **opportunities for technologists and warfighters to evaluate potential solutions** to existing or emerging warfighter capability gaps and probe the integration of technology development and concept exploration in order to maximize synergies that exist.
  - **Increases the knowledge and understanding to inform the decisions making process.**
  - **Embrace experimentation to restore the U.S. defense technology overmatch.**
- **Experimentation influence based on geography**
  - Showcases strategic signaling, deterrence of adversaries, and demonstration of resolve.
  - Establishes global infrastructure supporting rapid innovation.
  - Enhances international partnerships.
- **Experimentation contribution by military service branch**
  - Empowers operational venues' decision making.
  - Builds a knowledge base of standards and metrics.
  - Puts warfighters, scientists, and industry partners in the same room.

Joint International Experimentation Potential Events

Strategic Opportunity

- Cooperative, structured US and partner nation R&D will maximize modernization, increase interoperability, and strengthen coalition partnerships
- Jointly identify technologies and experiments that benefit allied partnerships
- Allies devoting R&D resources to modernize their military capabilities in similar priority areas

Solutions

International Prototyping

- USD (R&E) works with INDOPCACOM J85 and staff to identify opportunities that align to critical needs of Partner Nations and expand operational venues for experimentation and collaboration

Joint International Experimentation (JIE)

- Field experiments/ technology demonstrations, in cooperation with Partner Nations
- Provide relevant operational environments for testing and assessment of technologies and to enhance coalition defense and security needs and provide mutual benefits from increased cooperation

Foreign Comparative Testing (FCT)

- Find, assess, and field already developed foreign technologies to deliver affordable, near-term solutions to satisfy capability gaps, enhance lethality, and increase readiness
- US Gov -to- Foreign Industry technology evaluation executed under a contract

Strengthening Partnerships with Allies to deliver operational capability