



The Role of the Communities of Interest (Cols)

Mr. Dale Ormond, Principal Director, Research, Office of the Assistant Secretary of Defense (Research and Engineering)



Reliance 21

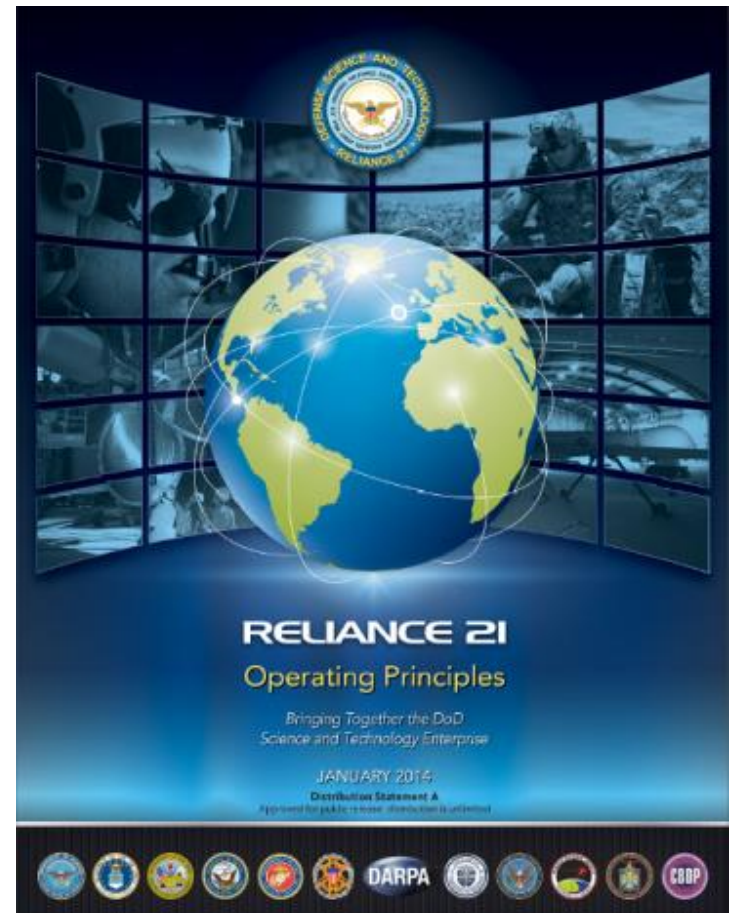
Reliance 21 is the overarching framework of the DoD's S&T joint planning and coordination process

JOINT PLANNING (S&T Oversight)

- Mitigate existing or emerging threats
- Generate affordability in the systems the Department acquires and operates
- Develop technology based surprise for our adversaries

JOINT COORDINATION (S&T Delivery)

- 16 Communities of Interest (ColS)
- Col S&T Roadmap Reviews
- Col Information Exchange Meetings
- Col Steering Groups
 - All Services and DoD Agencies Represented



Reliance 21 Overview

Reliance 21 is led by the S&T Executive Committee (S&T ExCom)

- Comprised of the major Department Components (Services, Agencies, Commands)
- Provides executive oversight and overarching guidance on S&T investments
- Ensures a collective understanding of the priorities, capability gaps, and opportunities of the DoD organizations that manage critical S&T resources

Reliance 21 is implemented through the Communities of Interest (Cols)

- Established in 2009 as a mechanism for multi-agency coordination and collaboration
- Comprised of S&E subject matter experts in specific technology areas where there is substantial investment across multiple components
- Produces S&T Roadmaps and Reports in their technical area detailing program goals and objectives, capability gaps, and leveraging opportunities

Communities of Interest (Col)

16 cross-cutting, S&T areas staffed with senior leaders and subject matter experts from the Services and Defense Agencies

Mission focus

Capabilities enabled by advanced technologies and systems

Counter-IED

Counter-WMD

Biomedical
(ASBREM)

Systems/ Capability focus

Multiple technologies are integrated into complex systems to achieve mission impact

Command, Control,
Comms, Computers, and
Intelligence (C4I)

Human Systems

Sensors

Space

Autonomy

Ground & Sea
Platforms

Electronic Warfare

Weapons
Technologies

Air Platforms

Cyber

Technology focus

Technology goals with multiple applications

Advanced
Electronics

Energy & Power
Technology

Materials &
Manufacturing Processes

Alumni Cols

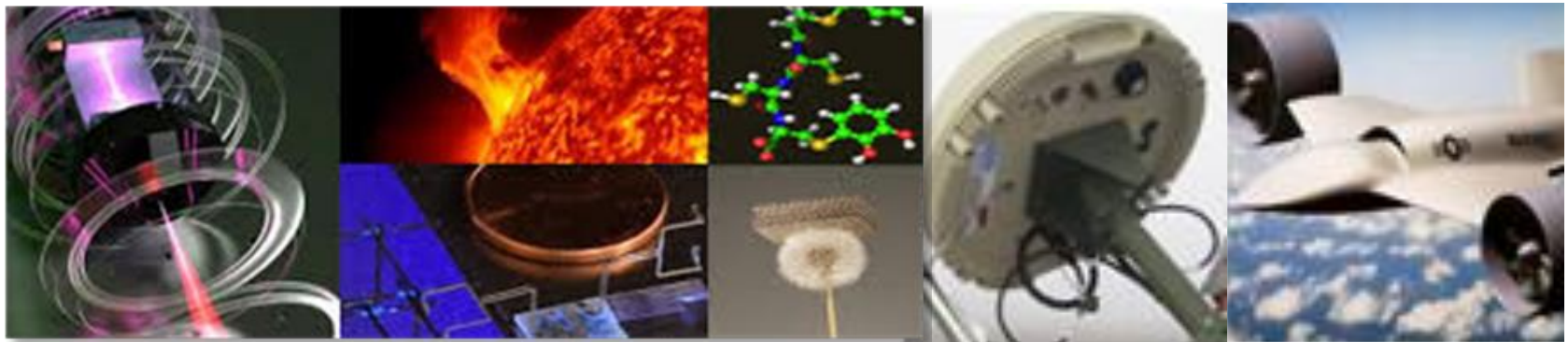
Engineered Resilient
Systems

The Role of the CoIs

- **Enable the defense of the Department's S&T investments**
- **Create multi-Service / Agency collaborative efforts to reduce duplication**
- **Develop joint S&T roadmaps**
- **Monitor key technology developments and engagement opportunities**
- **Provide technology options and advice to DoD S&T senior leadership**
 - Provide recommendations to Service S&T Executives regarding opportunities to leverage other Services' investments
- **Facilitate engagement across the spectrum of stakeholders**
 - Combatant Command (CCMD), Intel Community, Academia, Industry

Defend the Department's S&T Investments

- Describes the Department's S&T investment in detail
- Identifies opportunities and efficiencies that allow the Department to achieve maximum return on investment
- Provides data that confirms that the Warfighters are receiving the greatest benefit from DoD S&T resources and efforts



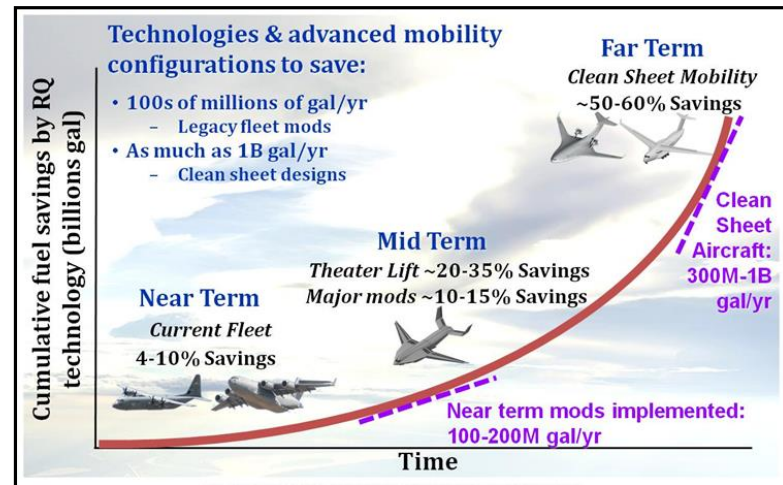
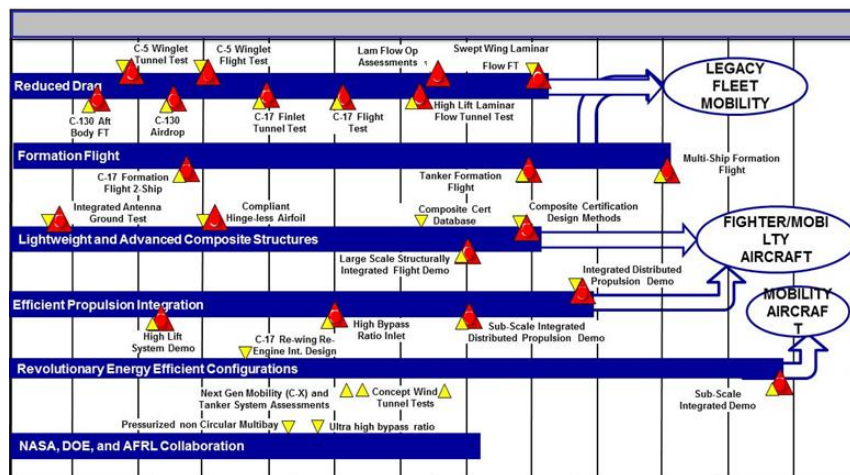
Create Collaborative Opportunities to Mitigate Unnecessary Duplication

- Examine, comprehend, and quantify Service operational needs and explore multi-Service/ Agency collaborative opportunities
- Organize working groups across different organizations to investigate and understand inner connections and/or overlaps within the technology areas
- Create clear multi-Service/ Agency program dependencies - identified by 'Lead, Shape, or Follow' roles

Develop Joint S&T Roadmaps

Roadmaps project a shared vision of DoD's S&T Portfolio

- Describe program objectives and key technical challenges
- Assess and address capability gaps and operational impact
- Indicate the capability gap timeline and threat development
- Propose potential Prototypes/Experiments to address the most challenging technology development needs



Maintain Vital Engagements to Maximize Capability Development

Col engagements are vital to addressing wide-ranging S&T needs

- **Combatant Command (CCMD) S&T Advisors (Operator Community)**
 - Provide a forum to articulate S&T priorities and investments with the potential to address CCMD capability gaps
- **Intelligence Community**
 - Evaluate intelligence information regarding current and future threats as well as emerging technologies to best align research and acquisition priorities
- **Basic Research Community (Academia, DoD Labs and Centers)**
 - Review Basic Research priorities and identify opportunities to engage future scientists and engineers
- **Industry Independent Research and Development**
 - Industry can use Col Roadmaps to identify technical challenges

External inputs influence DoD Technology Strategy and goals

Basic Research Community Engagement

(Academia, DoD Labs and Centers)

- Ensure an understanding of DoD's Basic Research investment priority in basic science
- Maintain awareness of emerging opportunities for transition to applied research and the Cols
- Inform Basic Research of potential areas for investment that could resolve technical challenges in capability development (e.g., materials and hypersonics)

Industry Engagement

Defense Innovation Marketplace is a key communication resource between DoD and Industry

Provides Industry:

- DoD R&E Strategic Guidance
- Service-specific S&T priorities, Virtual Technology Interchanges, events and solicitations are posted.
- DoD Investment Strategies and Technology Roadmaps
- Secure Portal to share IR&D Project Summaries

Provides DoD:

- Research for approved DoD S&T, R&D and Acquisition professionals
- >19,000 IR&D Project Summaries on Portal
- Technical Maturity and Surveillance
- Guide DoD R&E investments
- Potential for risk / cost reduction
- Opportunity to grow and expand new relationships and partnerships

The screenshot displays the Defense Innovation Marketplace website. At the top, there is a navigation bar with links for HOME, BUSINESS OPPORTUNITIES, COMMUNITIES OF INTEREST, NEWS / EVENTS, and FAQs. Below the navigation bar is a large banner featuring the Executive Office of the President of the United States seal and the text "Your Centralized Resource for IR&D Market Research". The banner also includes buttons for "GOVERNMENT IR&D Searchers" and "INDUSTRY IR&D Providers". A "NOW POSTED" section highlights a document titled "A 21st Century Science, Technology, and Innovation Strategy for America's National Security".

The main content area is divided into several sections:

- CONNECTING INDUSTRY AND DoD:** A paragraph explaining the marketplace's role in providing industry with insight into DoD R&E priorities and investment opportunities.
- NEW BUSINESS OPPORTUNITIES:** A section for finding DoD technology needs, listing RFPs, RFIs, and Presolicitations.
- ASDR&E FEATURES:** A section highlighting ASDR&E priorities and goals, including CSIS Recap.
- DEFENSE INNOVATION INITIATIVE (DII):** A section describing the DII effort to identify and invest in future innovation, listing Defense Innovation Unit Experimental (DIUx) and Long-Range Research and Development Planning Program (LRDPP).
- STRATEGIC DIRECTION:** A section for gaining insight into DoD and Services information, including Strategic Documents.
- SMALL BUSINESS RESOURCES:** A section for helping growing enterprises, including Small Business Innovation Research (SBR) program and Rapid Innovation Fund.
- NEWS & EVENTS:** A section for DoD news, events, and meetings, including News, Events, and Weekly S&T Bulletins.
- WHAT'S NEW:** A section for the latest news, including Navy Corrosion Management Systems Phase 3, Air Force Dynamic Wind Tunnel Balance, NASA Specialized Optical System Development, and DARPA Rapid Screening Technologies in Organic Synthesis (RFI).
- Strategic Documents:** A section for key documents, including Army Warfighter's Science and Technology Needs and Navy 2016 Science & Technology Strategy.
- Technology Interchange Meetings:** A section for meetings allowing DoD and industry/academia to cooperate on R&E technology challenges, including SDPE, Materials & Manufacturing Processes, Electronic Warfare, and Human Systems.
- Better Buying Power 3.0:** A section for contact information.

The footer of the website includes the text "CONNECTING INDUSTRY AND DoD" and a list of links: ABOUT, Privacy & Security, Acrobat, Recovery Act, FOIA, USA.gov, Accessibility/Section 508, No Fear Act, Web Policy, About DoD, and Contact Us.

Industry Engagement

National Defense Industrial Association (NDIA)

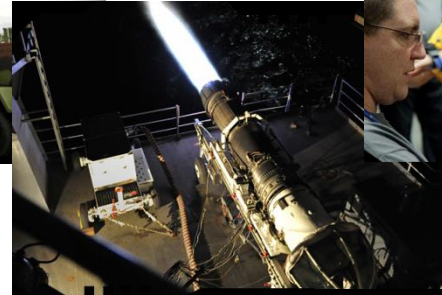
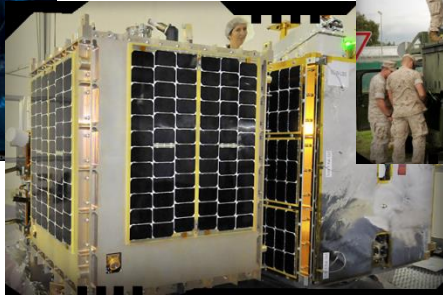
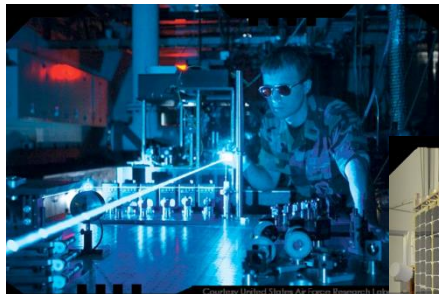
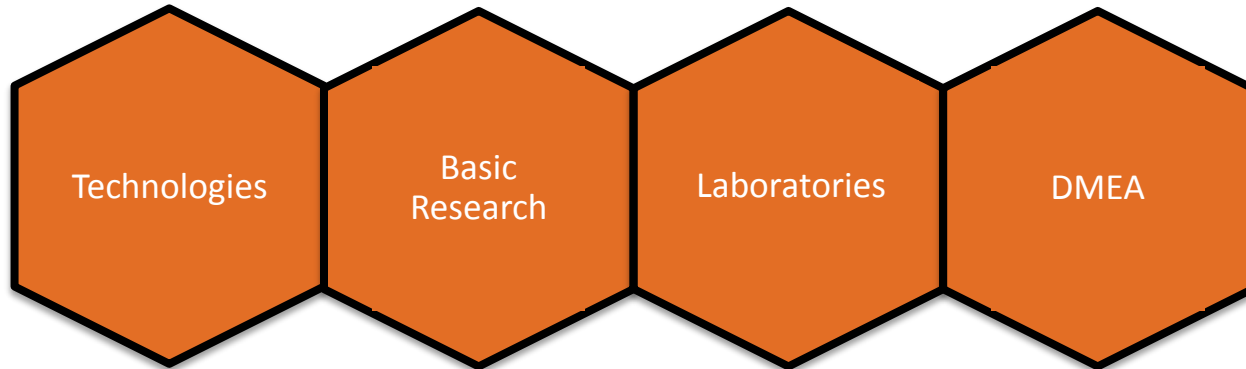
- “Creating Innovative DoD S&T Partnerships”
- Cols present joint S&T Roadmaps to promote communication and collaboration with industry
- Unique opportunity for industry to discuss roadmaps with Cols and share new ideas and related work that may help fill capability gaps
 - One-on-one sessions with members of Col Steering Groups to review on-going IR&D efforts, innovative ideas, and rapid commercial sector work



Summary

- Established in 2009, Cols have grown from mechanisms of information sharing and multi-agency coordination to an infrastructure that identifies opportunities for collaboration to reduce duplication
- Cols enable the S&T ExCom to deliver maximum S&T impact with reduced risk:
 - Coordinate S&T strategies
 - Share new ideas, technical directions, and technology opportunities
 - Jointly plan programs
 - Measure technical progress
 - Report on the general state of health of technology areas
- Joint S&T Roadmaps project a shared vision of the Department's S&T portfolio, showcase joint activities, and enable defense of investments
- Cols are in a unique position to engage with industry through NDIA to promote innovation in DoD and maintain awareness of the rapid technology development taking place in the commercial sector

DoD Research Directorate: Pursuing Sustained Technical Advantage



DoD Research Directorate:
<http://www.acq.osd.mil/rd/>

Twitter: @DoDIInnovation

CCMD S&T Advisor Engagement

- Gain an understanding of the Operational Environment, strategic objectives, current and projected threats
- Raise the CCMD S&T Advisor's awareness of the technologies that are currently addressing their needs

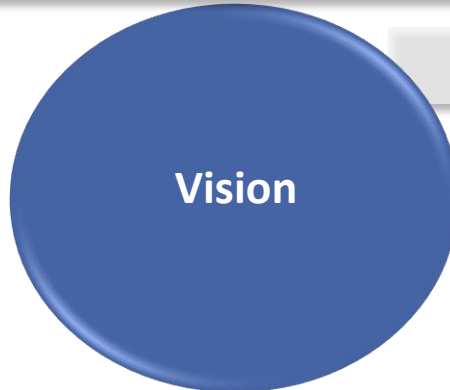
Intelligence Community Engagement

- **Maintain awareness of the fast-moving global environment, the wide array of threats, and the innovative technologies being developed around the world**
- **Focus on the development of US capabilities, while maintaining awareness of our adversary's capabilities to ensure continued US technological advantage**
- **Leverage Intelligence Community activities, global threat reports and insights to inform a strategic S&T investments**

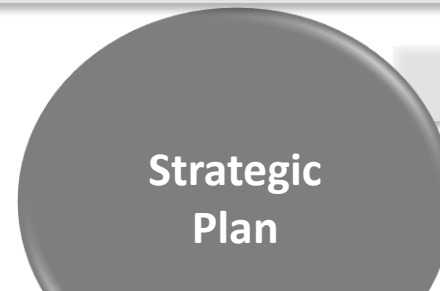
Continuously Refine our Strategic Thinking and Planning



“Where we are and who we are now”



“Where we’re going and who we will be”



“How we get there”

Current S&T Focus Areas and Priorities

Personal Protection & Performance	Detection, Sensing, & Navigation	Structural Technologies	Electromagnetics & Energetic Systems	Information Systems & Decision Support
Emerging Biosciences	Quantum	Novel Emerging Materials & Advanced Manufacturing	Directed Energy	Autonomy & Robotics
Human Systems - Cognition Performance & Sustainment	Nanotechnology	Weapons Systems	Electronic Warfare & Electromagnetic Spectrum	Artificial Intelligence
	Precision Position, Navigation, & Timing	Engines & Mobility	Energy Efficiency & Power	Future & High Performance Computing
				Cyber
				Data Analytics

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U.S. Communities of Interest

Cols lead the innovation and the acceleration of advanced concepts and prototypes across three main focus areas:

Mission Focus Capabilities enabled by advanced technologies & systems	Counter-Improvised Explosive Devices (IED)	Counter-Weapons of Mass Destruction (WMD)	Biomedical (ASBREM)*
Systems / Capability Focus Multiple technologies are integrated into complex systems to achieve mission impact	Human Systems	Sensors	Space
Technology Focus Technology goals with multiple applications	Ground and Sea Platforms	Electronic Warfare	Weapon Technologies
	Cyber	Command, Control, Communication, Computers and Intelligence (C4I)	Air Platforms
	Energy and Power Technologies	Advanced Electronics	Materials and Manufacturing Processes

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Leveraging the Entire R&E Ecosystem

Engaging with all partners to ensure technological superiority...

Win today's fight

Global Partners

Academia & Industry Partners

Federally Funded R&D Centers (FFRDCs) & University Affiliated Research Centers (UARCs)

DoD Labs, Engineering & Warfare Centers

Force acceleration of science and engineering – driving ideas to capability

Design and acquire for the next fight

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- Refine our Mission, Strategic Plan, and Vision for Technical and Enterprise Priorities

- Continuous look at the Technology, Focus Areas, Cols, and Partnering
Are we addressing the right problems?

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<p>Mission Focus Capabilities enabled by advanced technologies & systems</p>		<p>Counter-Improvised Explosive Devices (IED)</p>		<p>Counter-Weapons of Mass Destruction (WMD)</p>		<p>Biomedical (ASBREM*)</p>
<p>Systems / Capability Focus Multiple technologies are integrated into complex systems to achieve mission impact</p>		<p>Human Systems</p>		<p>Sensors</p>		<p>Space</p>
<p>Autonomy</p> 		<p>Ground and Sea Platforms</p>		<p>Electronic Warfare</p>		<p>Weapon Technologies</p>
<p>Cyber</p> 	<p>Command, Control, Communication, Computers and Intelligence (C4I)</p> 	<p>Air Platforms</p> 				
<p>Technology Focus Technology goals with multiple applications</p>		<p>Energy and Power Technologies</p>		<p>Advanced Electronics</p>		<p>Materials and Manufacturing Processes</p>