International S&T Engagement Strategy

July 2014

The Under Secretary of Defense for Acquisition,
Technology & Logistics/International Cooperation and
the Assistant Secretary of Defense for Research & Engineering

RESEARCH
AND ENGINEERING

ACQUISITION, TECHNOLOGY
& LOGISTICS
INTERNATIONAL
COOPERATION

At a time of significant change for the Department of Defense (DOD), we are pleased to present this International Science and Technology Engagement Strategy as guidance for the DOD's science and technology (S&T) and international communities. Our offices, OASD(R&E) and OUSD(AT&L)/IC, have worked together to develop this strategy to ensure a coordinated and strategic approach to international science and technology cooperation. Achieving this will deliver improved capability through our own research, development, and acquisition programs, and help to build capacity and capability with our international partners.

Through increasing awareness and coordinated support of global technologies, we can establish and strengthen international science and technology partnerships. These partnerships are the foundation for improving U.S. capabilities and interoperability, mitigating existing or emerging threats, supporting coalition operations, strengthening the technological basis for joint humanitarian assistance and disaster recovery, and moreover, promoting global security to protect the homeland. Such efforts are critical as we continue the shift to the Asia-Pacific region and address the new threats and partnerships that accompany such engagements.

In a period of fiscal austerity, there are significant advantages in sustaining current and building future international relationships such as the sharing of partner capabilities, resources, and expertise. Together, we can align our resources and efforts to test new concepts, field new capability, and ensure the preservation of our military's technological superiority over our common adversaries. This does not prevent the U.S. from achieving a differentiating capability, but acts as a stronger platform on which we can build capability and reduce our risk.

Finally, we see a great opportunity within the framework that we have established to deliver integrated S&T roadmaps across the U.S. Services and Agencies through our DOD S&T Communities of Interest (COIs) technical groups. The COI roadmaps are already demonstrating value as a single, coordinated interface that enables us to work strategically and efficiently with our international partners. In so doing, we will advance our S&T to provide our military with the necessary capabilities to meet future demands.

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JUL 2 2014

Date

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Date

ASD(R&E) and OUSD(AT&L)/IC International S&T Engagement Strategy

Background

ASD(R&E) and USD(AT&L)/International Cooperation (IC) have developed a strategy to provide a more coordinated approach to DOD international science and technology (S&T) collaboration and engagement. The subsequent document is not prescriptive and is not designed to disturb Component-led international cooperative S&T activities, but intended to describe a structure for creating enhanced scientific and technology awareness, coordination, and strategic planning of DOD international S&T engagements, particularly in priority research areas. There are near- and far-term goals described in this strategy, and a detailed implementation memorandum will follow, pending further input from the various stakeholders.

This strategy uses the ecosystem of technical groups known as Communities of Interest (COIs), which span cross-cutting areas of S&T throughout the DOD. These groups are populated by the Department's subject matter expert leaders drawn from the Services, Defense Agencies, and OSD that have insight into their portfolio of research investments.

Vision

Coordinated DOD global S&T engagement to enhance interoperability, relationship building and collaboration with partner nations, accelerate the pace of U.S. research and development, leverage emerging global opportunities, improve U.S. capabilities and those of our partner nations, mitigate the risk of global threats, and gain economic efficiencies.

Mission

Leverage global research and development (R&D) to ensure superior and affordable development in areas[1] critical to defense, including but not limited to:

- Advanced Electronics
- Air Platforms
- Autonomy
- Biomedical
- Command, Control, Comms, Computers & Intelligence (C4I)
- Counter IED
- Counter Weapons of Mass Destruction
- Cyber
- Electronic Warfare/Electronic Protection
- Energy & Power Technology
- Engineered Resilient Systems
- Ground & Sea Platforms
- Human Systems
- Materials & Manufacturing Processes
- Sensors and Processing
- Space
- Weapons Technologies

Guiding Principles

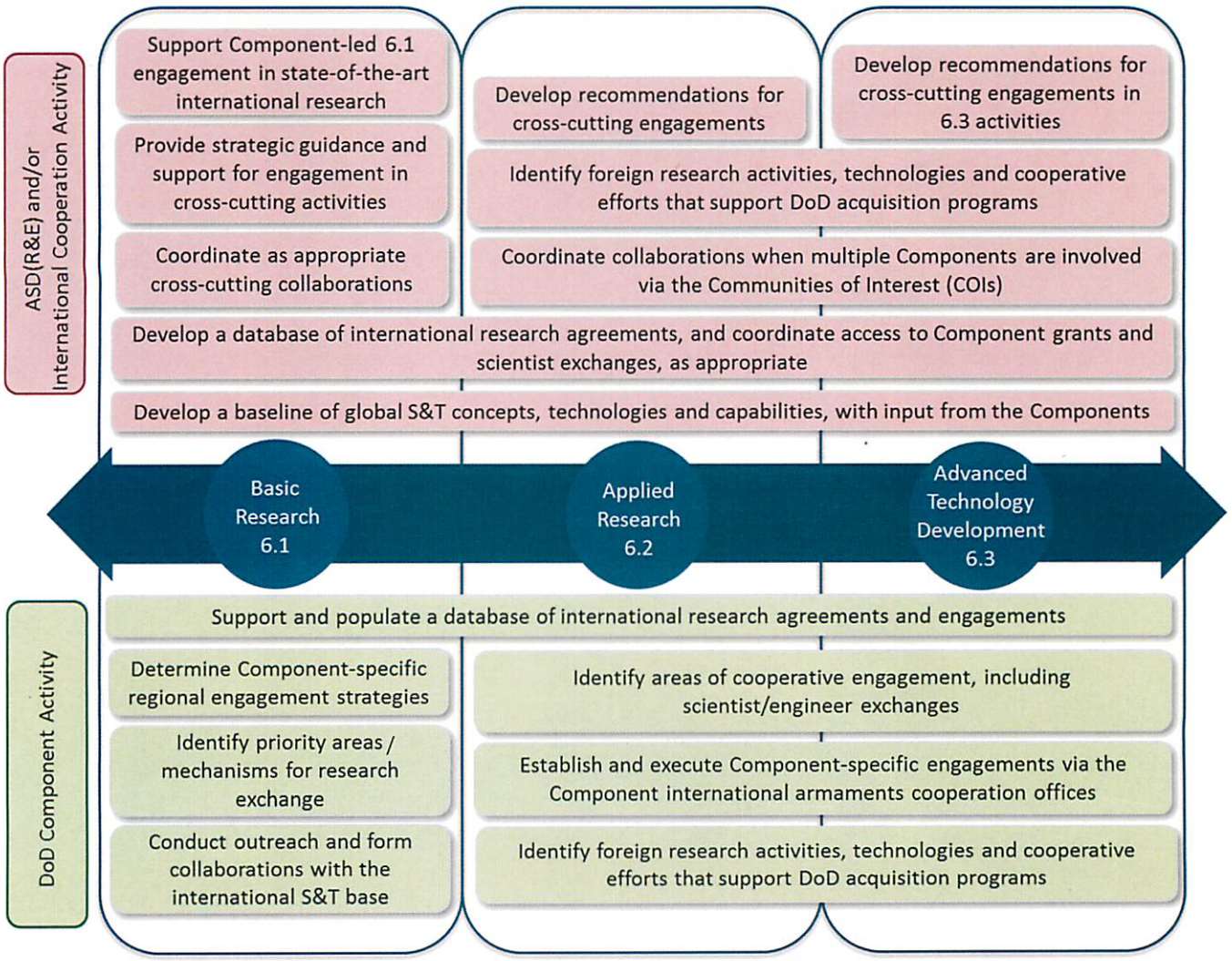
1. Prioritize and invest in international activities as a tool to technically, economically or strategically benefit the U.S. while simultaneously enhancing capabilities of our foreign partners, as aligned with Secretary of Defense strategic guidance.
2. Use the Communities of Interest (COIs) as an information sharing venue for coordination of cross-cutting international S&T activities.
3. Support and encourage Component-led international S&T activities in any country not prohibited by U.S. law.
4. Ensure that international cooperative research activities protect the security of critical U.S. technologies while enhancing global partnerships in basic and applied research.

[1] This list of critical areas is derived from the 2013 listing of Communities of Interest as documented in "Reliance 21 Operating Principles".

Science and Technology (S&T) Activities by Funding Type and DOD Office

Objectives

1. Develop a baseline of relevant global S&T concepts, existing and emerging technologies, and capabilities.
2. Identify, analyze, and substantiate the existing DOD international S&T engagements across the DOD research communities.
3. Identify engagement gaps (i.e., missed opportunities) in S&T priority areas to inform DOD decisions (lead, collaborate, follow, watch).
4. Develop and implement international cooperation to address engagement gaps in S&T priority areas.



Strategies to Achieve Objectives

This strategy provides clarification for actions that are aligned with the stated objectives. To achieve these objectives, it is critical to first establish a baseline of current domestic and international S&T opportunities and capabilities, then identify potential improvement of U.S. DOD S&T capability through global engagement. Specifically, it is important to develop robust measures of success and maturity in priority S&T areas, and identify and address gaps in current and future engagements that are necessary to meet required research capabilities.

- Leverage domestic and international expertise to understand priorities, and determine the attributes and maturation timelines of these key domestic and international technology areas.
- Review existing qualitative efforts to understand current engagements.
- Conduct quantitative analyses on current and projected research engagements.
- Strategically identify areas most likely to benefit from additional investment, and the potential global partners in those areas, prioritizing, where possible, according to S&T opportunities.
- Strengthen and broaden domestic science and engineering activities and foster an environment of scientific discovery by engaging the international community in far-sighted fundamental research partnerships and collaborations.

Objective 1

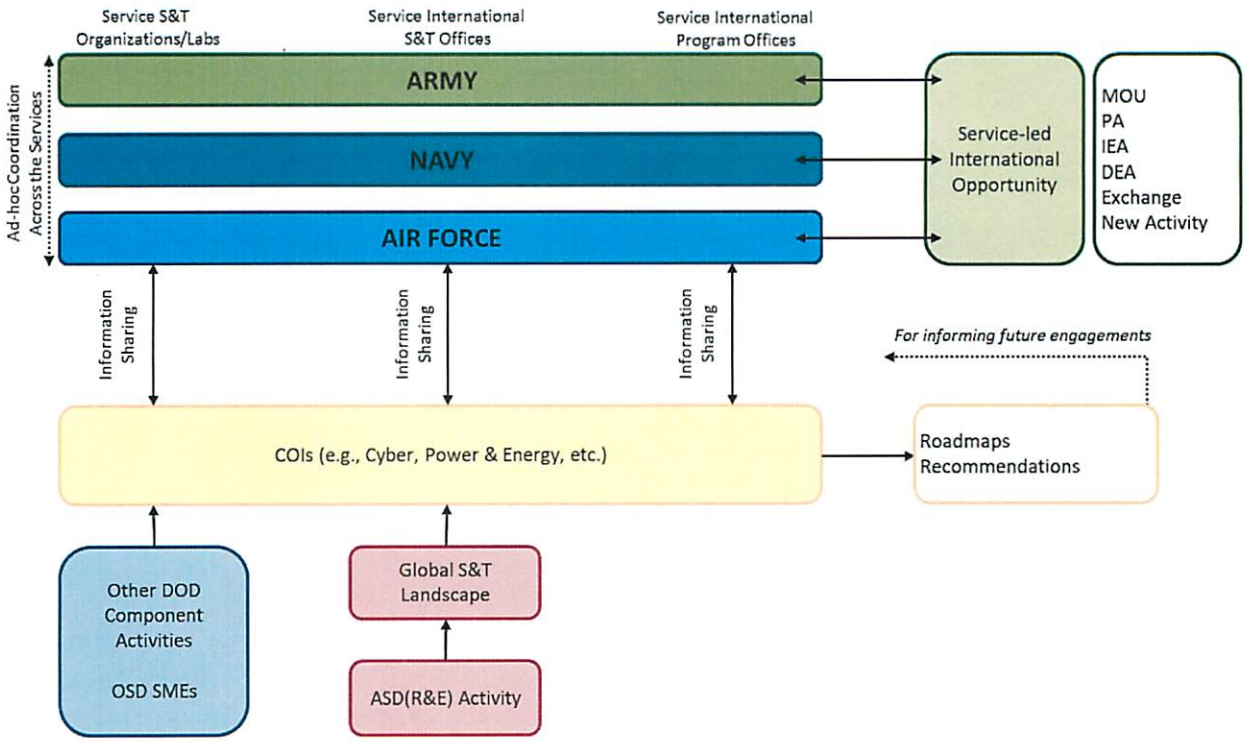
Develop a baseline of relevant global S&T concepts, existing and emerging technologies, and capabilities.

- Develop an understanding of the global state of research in areas of importance to the DOD.
  - Leverage expertise and work products of DOD Components' international S&T offices (including the Army's International Technology Centers (ITCs), Navy's Office of Naval Research-Global (ONR-G), and Air Force Office of Scientific Research (AFOSR)/Air Force Research Laboratory (AFRL/XPPI)) to stay current with foreign scientific research and technology development (e.g., Army's Global S&T Watch), as well as international experts (outside of the U.S.) in S&T priority areas.
  - Conduct quantitative open source analyses on relevant S&T areas.
  - Leverage international partners' unique threat perspectives to red-team DOD approaches.
  - Identify ally and partner nation technologies through leveraging activities of the ODASD for Rapid Fielding's (RF) Joint Capability Technology Demonstrations, Comparative Technology, and Rapid Reaction Technology offices.
- Identify optimal outcomes of collaboration with allies and partner nations.
  - Work with OSD (e.g., AT&L/IC)) and the Service international offices (e.g., Navy International Programs Office, Deputy Assistant Secretary of the Army for Defense Exports and Cooperation, Deputy Under Secretary of the Air Force, International Affairs) to identify ongoing international agreements and activities, including scientist and engineer exchanges.
- Assess non-allied international interest and engagement in S&T areas of military relevance.
- Identify the difference between domestic and international capabilities.
  - Understand how international technologies may impact DOD capabilities and missions.
- Engage with industry in research to identify emerging global technologies and applications.
- Coordinate with Geographic Commanders' S&T Offices to assess the status of S&T engagements with selected partner nations in support of broader Theater Security Cooperation efforts.

Objective 2

Identify, analyze, and substantiate the existing DOD international S&T engagements across the DOD research communities.

- Focus on areas with multiple engagements that cut across the Components.
  - Compare technology and context data from the domestic baseline in Objective 1 to identify emerging application areas and determine "near peer competitor(s)" in underlying S&T concepts.
  - Leverage internal program reviews and evaluations from across the Components to determine missed opportunities in current engagements.
  - Assess effectiveness of existing collaborative tools and new global opportunities.
  - Address non-scientific issues that present barriers to collaboration by coordinating across OSD, Geographic Commanders and the Components.
  - Utilize the COIs to share information about the DOD S&T engagements and opportunities in priority areas and coordinate analysis in cross-cutting areas, as outlined below:



Objective 3

Identify engagement gaps (i.e., missed opportunities) in S&T priority areas to inform DOD decisions (lead, collaborate, follow, watch).

- Assess existing or new bilateral and multilateral relationships.
  - Identify barriers to mutually beneficial international engagement, including between partner nations.
- Utilize the engagement gap analysis to inform COI roadmap activities, including the development of recommendations for increased or refocused domestic investments and/or international collaborations in priority areas in order to:
  - Lead (i.e., accelerate technological progress and secure a competitive advantage); or
  - Collaborate and share (i.e., contribute equally with partner nation(s) to the development of the technology); or
  - Follow and learn (i.e., develop or deploy capability); or
  - Watch (i.e., play a minor role in development but be aware and knowledgeable of implications).
- Develop and leverage relationships among stakeholders across the DOD to execute recommendations.

Objective 4

Develop and implement international cooperation to address engagement gaps in S&T priority areas.

- Enhance cooperation between the Components' international offices and AT&L/IC to inform S&T engagement with partner nations and synchronize efforts with Geographic Commanders' security cooperation activities.
- AT&L/IC will advise and assist the Components in identifying, developing, and implementing international S&T activities through:
  - Identifying foreign S&T efforts that could potentially meet current U.S. gaps/needs.
  - Identifying cooperative S&T opportunities early on in the acquisition process.
  - Leveraging international cooperative relationships to strategically meet and fill priority S&T gaps.