

Terms of Reference
Naval Research Advisory Committee
Science and Technology for Naval Warfare, 2015--2020

Objective

Identify the science and technology in which the U.S. naval services should consider investing to counter predicted threats and to enhance the effectiveness of U.S. forces in the period 2015 to 2020 while undertaking Littoral Operations.

Background

The primary mission of the Department of the Navy is to develop and prepare Navy and Marine Corps forces to support the interests of the United States as directed by the President and the Secretary of Defense. This includes forces for the effective prosecution of war at sea and maintaining free access of the seas, including Littoral Operations; projecting military power ashore; providing air/missile defense in forward areas; and providing support to other U.S. military forces and coalition forces.

To accomplish the above, the Department of the Navy must be cognizant of the capabilities, both current and predicted, that could be available to other nations or terrorist organizations that could threaten U.S. naval forces or their ability to execute assigned responsibilities, or interfere with naval ISR and/or C³ activities.¹ Based on this knowledge, the Department of Defense and the Navy can then better structure their investment in science and technology to ensure that operating forces can effectively counter such sensors and weapons to maintain a technological advantage on future battlefields.

Current U.S. Navy policy is to emphasize the preparation of forces for the Global War on Terrorism and Littoral Operations, generally defined as the projection of sea-based capabilities to the shore and inland, both in naval and in joint operations. This is in sharp contrast to the Cold War era in which U.S. naval forces were prepared primarily to counter Soviet naval and air forces in open ocean areas, and to support ground combat in Soviet peripheral areas and NATO regions. The increased importance of Littoral Operations imposes new sets of technological challenges on U.S. naval forces.

Accordingly, it is appropriate to establish an NRAC panel to specifically survey and categorize the predicted requirements to identify the naval science and technology that will be needed to provide U.S. decision makers who are responsible for developing future weapons, sensors, and related systems with the capabilities required by U.S. naval forces to effectively operate in littoral areas and support the Global War on Terrorism in the 2015--2020 time period. Further, the panel shall focus initially on geographic areas that are (1) critical to U.S. political-military interests, and (2) potentially vulnerable to hostile interference of U.S. and Allied activities.

¹ ISR = Intelligence, Surveillance, and Reconnaissance

C³ = Command, Control, and Communications

Specific Tasking

The NRAC panel shall:

(1) Survey and categorize the technologies for sensors, weapons, and related capabilities that will be available to potentially hostile forces in the period 2015--2020 that could interfere with U.S. naval operations.

(2) Identify and qualify the feasibility of technological capabilities anticipated to be available to both the United States and anticipated adversaries in 2015--2020.

(3) Contrast anticipated U.S. capabilities against probable adversarial forces to identify any capability gaps.

(4) Identify planned U.S. science and technology investments that address capability shortfalls.

(5) Identify capability gaps that are not being adequately addressed by current U.S. Navy (or other Defense Department/government agency) science and technology efforts.

(6) On the basis of the above, provide recommendations for future naval science and technology investments.