FY 2002 RDT& E,N BUDGET ITEM JUSTIFICATION SHEET DATE: June 2001

BUDGET ACTIVITY: 1 PROGRAM ELEMENT: 0601152N
PROGRAM ELEMENT TITLE: In-House Laboratory Independent Research (ILIR)

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE
0601152N	15,262	16,193	16,291

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program sustains U.S. naval science and technology (S&T) superiority, provides new technological concepts for the maintenance of naval power and national security, and helps avoid scientific surprise, while exploiting scientific breakthroughs and providing options for new Future Naval Capabilities (FNCs). It responds to S&T directions of the Department of the Navy (DON) Integrated Warfare Architecture Requirements (IWARs) for long term Navy and Marine Corps improvements, is in consonance with future warfighting concepts and doctrine developed at the Naval Warfare Development Command and the Marine Corps Combat Development Command, and enables technologies to significantly improve the JCS's Future Joint Warfighting Capabilities. It is managed by the Chief Scientist of the Office of Naval Research and executed by the Commanding Officers (COs) and Technical Directors (TDs) of the Naval Warfare Centers, Navy Personnel Research and Development Center, and Bureau of Medicine and Surgery laboratories.

The vision of the DON S&T strategy is "to inspire and guide innovation that will provide technology-based options for future Navy and Marine Corps Capabilities", where "Innovation is a process that couples Discovery and Invention with Exploitation and Delivery". DON Basic Research, which includes scientific study and experimentation directed toward increasing knowledge and understanding in national-security related aspects of physical, engineering, environmental and life sciences, is the core of Discovery and Invention. Basic research projects are developed, managed, and related to more advanced aspects of research in some hundred-plus technology and capability-related 'thrusts', which are consolidated in 22 Research Areas. These in turn support the major motivational research focus areas of the Navy and Marine Corps after Next: maritime and space environments that impact operational capability, information science/knowledge management in network-centric operations, sensors and electronic systems for surveillance and tactical applications, energy/power/propulsion for performance gain and sustainment advanced air/surface/undersea and multi-environment Naval platforms design/signature reduction, and superior human performance/training/care of Sailors and Marines.

This portion of the DON Basic Research Program provides participating Navy Centers and Laboratories with funding for basic research to support the execution of their assigned missions, for developing and maintaining a cadre of active research scientists who can distill and extend results from worldwide research and apply them to naval problems, to

promote hiring and development of new scientists, and to encourage collaboration with universities, private industry, and other Navy and DOD laboratories, in particular the corporate Naval Research Laboratory (NRL).

JUSTIFICATION FOR BUDGET ACTIVITY: This program is budgeted within BASIC RESEARCH, Budget Activity 1, because it supports pursuit of fundamental knowledge for the solution of identified military problems.

(U)PROGRAMS PLANS AND ACCOMPLISHMENTS: Navy ILIR procedures were revised in FY00 to further encourage collaboration and the participation of new scientists, to relate the program more closely to the overall DON S&T strategy and the ONR/NRL thrusts, and to strongly encourage projects comprising teams of investigators that are of sufficient scope and risk to have a potentially significant impact on DON priorities. It is expected that this change will be accompanied by additional S&T initiatives between ONR and the Naval Warfare Centers and laboratories in FY02, with the objective of facilitating 'disruptive' approaches to innovation to improve Fleet/Force capabilities and reduce vulnerabilities. ILIR status, results, and management are reported annually to the Deputy Under Secretary of Defense (Science and Technology).

ILIR projects are selected by Center/Lab COs and TDs near the start of each FY through internal competition. Projects typically last 3 years, and are generally designed to assess the feasibility of new lines of research. Successful efforts attract external, competitively awarded funding. Because the Warfare Centers and Labs encompass the full range of naval technology interests, the scope of ILIR topics parallels that of ONR, per the list of ‘Continue’ items in the R2 for 0601153N, Defense Research Science. In FY00, about 50 projects were completed and 80 initiated. Accomplishments in completed projects included higher speed field effect transistors, improved underwater communications (Telesonar), techniques for biochemical decompression and modulation of oxygen toxicity for divers, several new signal processing techniques and algorithms (for antisubmarine warfare, computational fluid dynamics, and communications), new functional, energetic and structural materials and improved understanding of material properties, new designs for optical and acoustic sensors, and advances in fuels, fuel cells, and battery technologies. Examples of new projects that started in FY00 and continued in FY01 include microemulsions for biological decontamination, bistatic acoustic scattering, application of chaos theory to diesel combustion, matched field tracking for feature extraction in ASW, mapping of underwater human sounds, advances in laser and spin-density-wave dielectric materials, a new spectral wave model, data/knowledge mining in R&D and command and control, wideband antenna design for submarine communications, and kinetics of energetic materials.

(U) PROGRAM CHANGE SUMMARY:

FY 2002 RDT& E,N BUDGET ITEM JUSTIFICATION SHEET DATE: June 2001

BUDGET ACTIVITY: 1 PROGRAM ELEMENT: 0601152N
PROGRAM ELEMENT TITLE: In-House Laboratory Independent Research (ILIR)

	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget	15,544	16,343	16,494
Adjustments from FY 2001 President's Budget:			
Program Adjustment	0		-23
NWCF Rate Adjustments	0	0	-191
Congressional Rescission	-61	-150	0
SBIR Adjustment	-15	0	0
Execution Adjustment	-206		
Non-Pay Inflation Adjustments			11
FY 2002 President’s Budget Submission	15,262	16,193	16,291

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: Not Applicable.
(U) Schedule: Not Applicable.

(U) OTHER PROGRAM FUNDING SUMMARY:

(U) NAVY RELATED RDT&E:
(U) 0601153N Defense Research Science

(U) NON NAVY RELATED RDT&E:
(U) 0601101A In-House Laboratory Independent Research (Army)
(U) 0601101F In-House Laboratory Independent Research (Air Force)

(U) SCHEDULE PROFILE: Not applicable.