



ACTUV

ANTI-SUBMARINE WARFARE CONTINUOUS TRAIL UNMANNED VESSEL

CHRISTENING

PORTLAND, OREGON APRIL 7, 2016



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PROGRAM DESCRIPTION

The Defense Advanced Research Projects Agency (DARPA)'s ACTUV program has designed, developed and constructed an entirely new class of unmanned ocean-going vessel able to travel thousands of miles over the open seas for months at a time, without a crew, and with a high degree of autonomy in operation. ACTUV embodies breakthroughs in autonomous navigation with the potential to revolutionize U.S. maritime operations. DARPA is working with the Office of Naval Research to fully test the capabilities of the vessel and several innovative payloads, with the goal of transitioning the technology to Navy operational use once fully proven. The ACTUV technology demonstrator was recently launched at its construction site in Portland, Ore. Open-water testing is scheduled to begin in summer 2016 off the California coast.



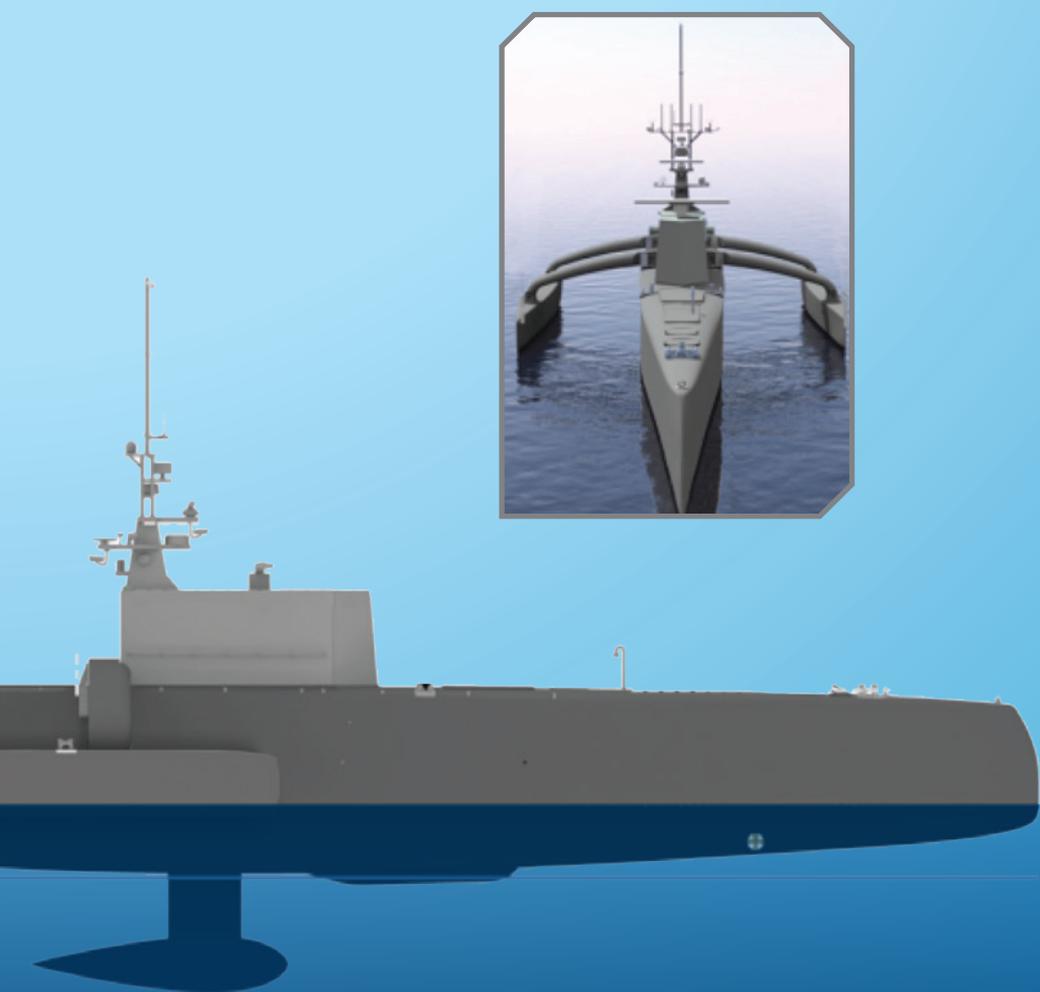
ANTI-SUBMARINE WARFARE CONT

Max Speed:	27 Knots
Displacement, Fully Loaded:	145 Long Tons
Displacement, No Fuel or Payload:	100 Long Tons
Autonomous under Human Supervision, or Teleoperated	
Compliant with International Regulations for Preventing Collisions at Sea (COLREGS)	
Operational through Sea State 5	
Survivable through Sea State 7	





INOVOUS TRAIL UNMANNED VESSEL





SCHEDULE

9:00 AM	Presentation of the Colors and National Anthem
9:05 AM	Welcome Remarks: Mr. Scott Littlefield, ACTUV Program Manager, DARPA
9:15 AM	Remarks: Mr. Roger Krone, Chairman and Chief Executive Officer, Leidos
9:25 AM	Remarks: Rear Admiral Robert Girrier, Director, Unmanned Warfare Systems (OPNAV N99)
9:35 AM	Remarks: Rear Admiral Mathias Winter, Chief of Naval Research/Innovation Technology Requirements and Test & Evaluation (OPNAV N84)
9:45 AM	Introduction of the Deputy Secretary of Defense: Dr. Arati Prabhakar, Director, DARPA
10:00 AM	Principal Address: The Honorable Robert O. Work, Deputy Secretary of Defense
10:20 AM	Invocation: Lieutenant Janice R. Clarke, U.S. Navy
10:25 AM	Christening: Dr. Arati Prabhakar, Director, DARPA
10:30 AM	Reception and Tours
12:30 PM	Event Concludes

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Mr. Scott Littlefield, ACTUV Program Manager, DARPA

Mr. Littlefield joined DARPA's Tactical Technology Office as a Program Manager in October 2011 and specializes in advanced craft and unmanned vehicles in the maritime domain.

Prior to DARPA, Mr. Littlefield was the Director of Technology and Innovation for the Naval Surface Warfare Center (NSWC), Carderock Division, where he managed the science and technology (S&T) portfolio. Prior to his work at NSWC Carderock, Mr. Littlefield managed S&T programs at the Office of Naval Research (ONR) in areas including ships and ship systems, unmanned vehicles, anti-submarine warfare (ASW) sensors and power and energy.

Mr. Littlefield received a Bachelor of Science in mechanical engineering from the University of Michigan and Master in Public Administration from Harvard University, completed graduate coursework in acoustics from the Pennsylvania State University and is currently pursuing his Doctor of Philosophy in engineering management and systems engineering from the George Washington University. Mr. Littlefield is a Licensed Professional Engineer in the Commonwealth of Virginia.



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Mr. Roger Krone, Chairman and Chief Executive Officer, Leidos

Roger A. Krone is Chairman and Chief Executive Officer of Leidos. With more than \$5 billion in annual revenue and 19,000 employees worldwide, Leidos is a recognized global leader in solving important problems in national security, health, and engineering. Before being named CEO in July 2014, Krone held leadership roles at some of the most prominent organizations in aerospace for nearly 40 years.

For Krone, the future of Leidos is one with a laser focus on its customers, shareholders, and employees. Under his strategic vision, the organization remains committed to investing in critical internal research and development efforts. He is the driving force behind the company's culture of innovation, the environment shaped to inspire employees to create innovative technology solutions that respond to client's challenges today and tomorrow. Before joining Leidos, Krone served as president of Network and Space Systems for The Boeing Company, where he provided calculated direction for approximately 15,000 employees in 35 states and 12 countries. His organization provided integrated technologies to government and commercial customers. He joined McDonnell Douglas in 1992 serving as director of financial planning, vice president and treasurer after a 14-year career at General Dynamics, where he held positions in program management, engineering, and finance. Krone also previously served as chairman of the board of directors of the United Launch Alliance, a 50-50 joint venture between Boeing and Lockheed Martin that helps carry weather, telecommunications and national security satellites to space and employs more rocket scientists than any other company in the world.

Krone earned a bachelor's degree in aerospace engineering from the Georgia Institute of Technology, a master's degree in aerospace engineering from the University of Texas at Arlington, and a master of

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business administration from the Harvard Graduate School of Business. A Six Sigma Green Belt, Krone is both a licensed commercial pilot and a certified public accountant. He is also a Fellow of the American Institute of Aeronautics and Astronautics and a Fellow of the Royal Aeronautical Society in the United Kingdom. Krone is a member of the Georgia Tech Foundation Board of Trustees, and a member of the board of WETA Public Television and Radio in Washington, D.C. He is a long-time supporter of the Urban League, and currently serves on the board of the Greater Washington chapter. He is also a member of the Executive Council of the Aerospace Industries Association (AIA) and a member of the AOPA Foundation's Board of Visitors.



Rear Admiral Robert Girrier, Director, Unmanned Warfare Systems (OPNAV N99)

Rear Adm. Robert Girrier entered the U.S. Naval Academy from the State of New York, graduating with merit in 1983. Girrier earned a Master of Arts in International Affairs from the American

University School of International Service, a Master of Marine Affairs from the University of Rhode Island and a master's in public administration as a Moreau Scholar from the Kennedy School of Government at Harvard University, specializing in negotiation and conflict resolution.

A surface warfare officer, he most recently served as deputy commander and chief of staff, U.S. Pacific Fleet and Director for Operations (J3) and U.S. Pacific Command prior to that. At sea, he commanded Carrier Strike Group (CSG) 7, USS Ronald Reagan Strike Group and CSG-11, USS Nimitz Strike Group. In Ronald Reagan Strike Group he conducted a combat deployment in support of Operations Enduring Freedom and New Dawn and provided disaster response for Japan during Operation Tomodachi. Prior to these tours he served as vice commander, Naval Mine and Anti-Submarine Warfare Command, with operational commander duties in 2nd, 3rd, 5th and 7th Fleets.



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Additionally, Girrier commanded Destroyer Squadron (DESRON) 15, forward deployed in Yokosuka, Japan, where the squadron developed tactics, techniques and procedures for anti-submarine warfare and maritime ballistic missile defense while exercising extensively with navies throughout the 7th Fleet area. He commanded USS Roosevelt (DDG 80) deploying in support of Operation Enduring Freedom in the Mediterranean theater, serving as air defense commander for the 6th Fleet. Additionally, Girrier commanded USS Guardian (MCM 5), a forward deployed Avenger-class mine countermeasure ship operating from Sasebo, Japan, in support of 7th Fleet operations.

Ashore, Girrier served as an instructor at the Surface Warfare Officer's school in Newport, Rhode Island. In Washington D.C., as a policy planner and representative to NATO bodies on counter proliferation for the Joint Staff (J-5); as the administrative aide to the secretary of the Navy; the executive assistant to the deputy chief of Naval Operations for Plans, Policy and Operations; as the deputy director of the Navy Staff and as the deputy commander and chief of staff, U.S. Pacific Fleet. Overseas he served as the executive assistant to Commander, U.S. Naval Forces Europe and Commander, Allied Joint Force Command Naples.

Girrier assumed duties as the director for Unmanned Warfare Systems (OPNAV N99) on the staff of the Chief of Naval Operations (CNO) in Sept. 2015. In this capacity, he is responsible for the rapid development, prototyping and demonstration of U.S. Naval unmanned warfare systems.

His personal decorations include the Defense Superior Service Medal and five awards of the Legion of Merit.

He is co-author of the professional naval books, "Command at Sea," the "Watch Officers Guide" and the "Division Officer's Guide."

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Rear Admiral Mathias Winter, Chief of Naval Research/Innovation Technology Requirements and Test & Evaluation (OPNAV N84)

Rear Adm. Mathias Winter, a 1984 graduate of the University of Notre Dame with a Bachelor of Science in Mechanical Engineering, received his commission through the Naval Reserve Officers Training Corps and was designated a naval flight officer in 1985.

Winter served operational tours as an A-6E Intruder Bombardier/Navigator with Attack Squadrons 42, 85 and 34 making multiple deployments aboard aircraft carriers USS Saratoga (CV 60), USS America (CV 66), USS Dwight D. Eisenhower (CVN 69) and USS George Washington (CVN 73).

Winter's acquisition tours include assistant deputy program manager (DPM) for the Joint Standoff Weapon System; executive assistant to the Joint Strike Fighter (JSF) program director; chief engineer for JSF Integrated Flight and Propulsion Control; DPM for the Tactical Tomahawk All-Up-Round development program; chief of staff to the Program Executive Officer (PEO) for Tactical Aircraft Programs; and his major acquisition command tour as the Precision Strike Weapons (PMA-201) program manager.

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Winter has served flag tours as the commander, Naval Air Warfare Center Weapons Division, China Lake/Point Mugu, California, assistant commander for Test and Evaluation, Naval Air Systems Command and PEO for Unmanned Aviation and Strike Weapons. In December 2014, he became the 25th chief of Naval Research with concurrent flag responsibilities as director, Innovation Technology Requirements, and Test & Evaluation.

Winter holds a master's degree in computer science from the Naval Postgraduate School and another in national resource strategy from National Defense University's Industrial College of the Armed Forces; and a Level III certification in Program Management and Test & Evaluation from the Defense System Management College.



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His personal awards include the Legion of Merit (3), Defense Meritorious Service Medal (2), Navy Meritorious Service Medal (2), Navy and Marine Corps Commendation Medal (4), Joint Service Achievement Medal (2), Navy and Marine Corps Achievement Medal, Air Force Acquisition Excellence Award, Southwest Asia Service Medal, Kuwait Liberation Medal, and various unit and sea service awards.



Dr. Arati Prabhakar, Director, Defense Advanced Research Projects Agency

Arati Prabhakar, Ph.D., is director of the Defense Advanced Research Projects Agency (DARPA).

Dr. Prabhakar has spent her career investing in world-class engineers and scientists to create new technologies and businesses. Her first service to national security started in 1986 when she joined DARPA as a program manager. She initiated and managed programs in advanced semiconductor technology and flexible manufacturing, as well as demonstration projects to insert new semiconductor technologies into military systems. As the founding director of DARPA's Microelectronics Technology Office, she led a team of program managers whose efforts spanned these areas, as well as optoelectronics, infrared imaging and nanoelectronics.

In 1993, President William Clinton appointed Dr. Prabhakar director of the National Institute of Standards and Technology, where she led the 3,000-person organization in its work with companies across multiple industries.

Dr. Prabhakar moved to Silicon Valley in 1997, first as chief technology officer and senior vice president at Raychem, and later vice president and then president of Interval Research. From 2001 to 2011, she was a partner with U.S. Venture Partners, an early-stage venture capital firm. Dr. Prabhakar identified and served as a director for startup companies with the promise of significant growth. She worked with entrepreneurs focused on energy and efficiency technologies, consumer electronics components, and semiconductor process and design technologies.



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Dr. Prabhakar received her Doctor of Philosophy in applied physics and Master of Science in electrical engineering from the California Institute of Technology. She received her Bachelor of Science in electrical engineering from Texas Tech University. She began her career as a Congressional Fellow at the Office of Technology Assessment.

Dr. Prabhakar has served in recent years on the National Academies' Science Technology and Economic Policy Board, the College of Engineering Advisory Board at the University of California, Berkeley, and the red team of DARPA's Defense Sciences Research Council. In addition, she chaired the Efficiency and Renewables Advisory Committee for the U.S. Department of Energy. Dr. Prabhakar is a Fellow of the Institute of Electrical and Electronics Engineers, a Texas Tech Distinguished Engineer, and a Caltech Distinguished Alumna.



The Honorable Robert O. Work, Deputy Secretary of Defense

Robert O. Work was confirmed as the 32nd Deputy Secretary of Defense on April 30, 2014.

Mr. Work most recently served as Chief Executive Officer of the Center for a New American Security (CNAS). From 2009 to 2013, Mr. Work served as the Undersecretary of the Navy. In this capacity, he was the Deputy and Principal Assistant to the Secretary of the Navy and acted with full authority of the Secretary in the day-to-day management of the Department of the Navy.

In 2008, Mr. Work served on President-elect Barack Obama's Department of Defense Transition Team as leader of the Department of the Navy issues team. He also worked on the defense policy, acquisition, and budget teams.

In 2002, Mr. Work joined the Center for Strategic and Budgetary Assessments (CSBA), first as the Senior Fellow for Maritime Affairs, and later as the Vice President for Strategic Studies. In these positions, he



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focused on defense strategy and programs, revolutions in war, Department of Defense transformation, and maritime affairs.

Mr. Work was also an adjunct professor at George Washington University, where he taught defense analysis and roles and missions of the armed forces.

Mr. Work was a distinguished graduate of the Naval Reserve Officers Training Course at the University of Illinois, and was commissioned a second lieutenant in the U.S. Marine Corps in August 1974. During his 27- year military career, he held a wide range of command, leadership, and management positions. He commanded an artillery battery and a battalion, and was the base commander at Camp Fuji, Japan. His last assignment was as Military Assistant and Senior Aide to the Honorable Richard Danzig, 71st secretary of the Navy.

Mr. Work earned a Bachelor of Science degree in Biology from the University of Illinois; a Master of Science in Systems Management from the University of Southern California; a Master of Science in Space System Operations from the Naval Postgraduate School; and a Master in International Public Policy from the Johns Hopkins School of Advanced International Studies. He is a member of the International Institute for Strategic Studies (IISS).

His military and civilian awards include the Legion of Merit, Meritorious Service Medal, Defense Meritorious Service Medal, and the Navy Distinguished Civilian Service Award.



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