FY 2010 APPROPRIATIONS
Department of Defense

Project Name and Location	Purpose	Amount	Recipient	Taxpayer Interests
4-D Data Fusion Visualization, Honolulu, Hawaii	Continues development of capability to process, fuse and rapidly visualize very large amounts of spatial and temporal data in an immersive environment to facilitate situational awareness and understanding of the battlespace.	$3,200,000	Makai Ocean Engineering	Accurate volumetric data is important to understanding the performance of sensors in the undersea battlespace. The 4-D Data Fusion Visualization program takes very large amounts of data from numerous different sensors and databases and displays complex imagery, terrain, and volumetric data on PCs, as opposed to supercomputers. The visualization of the data allows improved situational awareness and allows interactive manipulation of location and time.
Applications of LIDAR to Vehicles with Analysis, Maui	Leverages prior year investments to enhance the space situational awareness capabilities of the Maui Space Surveillance Site and to provide state-of-the-art intelligence, surveillance, and reconnaissance capabilities to the warfighter. It will also provide the capability for immediate, real-time kill assessment of a missile intercept and enhance space situational awareness utilizing hyper-dimensional digital snapshots.	$10,000,000	Textron/Hnu Photonics	Funding for this project will enhance the space situational awareness capabilities of the Maui Space Surveillance Site (MSSS) and will provide advanced intelligence, surveillance, and reconnaissance capabilities to the warfighter. This program will enable a series of upgrades, including the Single Photon Detection Sensor System for enhanced data gathering; the MAIA Sensor System for high-accuracy ranging of targets; refurbishmentof the Laser Beam Director; and the Multi-Frame Blind Deconvolution capability to support critical Air Force advanced electro-optical systems. In addition, it will incorporate the Flash Hyper-Spectral Imaging System to capture high resolution spatial, thermal, temporal, and spectral data to rapidly assess and characterize objects for space situational awareness. This technology is unique in providing a real-time kill assessment for missile defense testing and operational missions. Proof of concept activities include simultaneous thermal analysis, real-time data for damage assessments, and determination of ballistic missile warhead composition.

				U.S. Army Pacific uses these funds to ensure good stewardship of its military bases and training lands. It is a modest investment that provides innovative fire control and management to reduce the fire risk to training areas and surrounding communities. The Army is better able to properly care for endangered species and valuable cultural sites on its property. These funds can be used to disseminate safety information and community outreach, to test waters for hazards. The Army's ability to respond quickly will help to calm community concerns and increase credibility. Working side by side to preserve precious environmental resources promotes good will and greater understanding between the U.S. Army and the local civilian populace.
Army Conservation and Ecosystem Management, Hawaii	Supports U.S. Army Pacific's efforts to be a good steward of its lands through tested conservation practices, monitoring for ordnance, fire control/management, and community outreach.	$5,000,000	U.S. Army Pacific	
				The demonstration of a bow lifting body on a 160-foot vessel would allow advanced testing of design concepts to enable the transition of the technology to current and planned Navy ships. Lifting bodies are a key method to improve the stability, speed, and efficiency of a wide variety of surface vessels, allowing significantly improved performance.
Bow Lifting Body Ship Research, Honolulu, Hawaii	Develops, builds, and tests a 160-foot Bow Lifting Body vessel to support the Office of Naval Research developed Advanced Bow Lifting Body Ship technology transition to the fleet.	$9,800,000	Pacific Marine	
				The Marine Corps needs additional capability to transport its weapons systems, equipment, cargo and personnel both from ship to the shore and across the beach. This new technology for amphibious surface-lift operations will carry two times the payload of the current system with less complexity and fit into the same footprint on Navy ships. The Captive Air Amphibious Transporter (CAAT) will also have the ability to ride over 15-foot obstacles such as seawalls and rocks, which is four times better than todays capability. It will have the ability to navigate 6 to 8 foot surf zones and handle steeper terrain than the existing system. The CAAT will be a significant force multiplier for the Marine Corps.
Captive Air Amphibious Transporter (CAAT), Honolulu, Hawaii	Funds a half-scale technology demonstrator of an amphibious, logistic craft for the Marine Corps to transport supplies and equipment from ship to challenging landing locations.	$2,200,000	Pacific Marine	

Center of Excellence for Research in Ocean Sciences (CEROS), Multiple Locations	Provides competitive grants for innovative concept and technology development in ocean and marine research for the Department of Defense.	$10,000,000	CEROS	The National Defense Center of Excellence for Research in Ocean Sciences employs a competitive, low-overhead process to fund and manage technology projects for improved warfighter capabilities in cooperation with the Defense Advanced Research Projects Agency. The process seeks specific research and development requirements from the Department of Defense, solicits projects, sets quantifiable metrics for success and awards competitive one year, fixed price, no fee contracts.
Communications Support Environment-State (CSE-State), Honolulu, Hawaii	Provides assured interoperable emergency communications capabilities for emergency responders in the event of natural disasters, terrorist attacks or cyber incidents.	$10,000,000	Hawaii National Guard	Homeland Security missions present significant challenges to ensure interoperable communications among all responding mission partners. To meet this critical need, the Communications Support Environment will guarantee needed emergency communications capabilities at the state level in response to natural disasters, terrorist attacks, and cyber-based incidents.
Covert Sensing and Tagging System, Honolulu, Hawaii	Develops a covert, low-cost, and expendable unattended sensor system to exploit target radiated acoustic energy in any tactical environment, providing reliable surveillance with near real-time reporting.	$3,200,000	Progeny Systems	Tagging, tracking, and locating technologies have been extensively used by Special Operations Forces to find and prosecute high value targets. The Covert Sensing and Tagging System uses expendable unattended ground sensors to provide increased acoustic detection capabilities, as well as efficient emplacement, automated detection, and improved data processing capabilities. The system will provide an effective means of tagging watercraft in support of overseas contingency operations.
Eagle Vision for the Hawaii Air National Guard, Honolulu, Hawaii	Upgrades the Hawaii Air National Guard's Eagle Vision commercial satellite downlink program with capability to receive extremely high resolution imagery from commercial satellite providers.	$6,200,000	HIANG	The Hawaii National Guard possesses one of five Eagle Vision systems to access imagery from commercial satellites. This imagery is used on a variety of disaster response and homeland security missions, and the Hawaii Eagle Vision system has been used to support numerous military exercises and missions in Thailand, India, Japan, and the Philippines. The requested funding will provide upgrades to improve the resolution of the imagery, which increases the system's ability to identify militarily significant data.

Edward M. Kennedy Institute for the United States Senate, Boston, Massachusetts	To establish a preeminent civic education institution for elementary school children, hich school students, college and graduate students, and adults from across the globe	$20,000,000	Edward M. Kennedy Institute for the United States Senate	The Edward M. Kennedy Institute for the United States Senate will utilize its partnership with the Library of Congress to improve the civic education of all students. The Institute will bring to life the unique system of government made possible by the U.S. Constitution using the role that both the U.S. Senate and House of Representatives to illustrate the important roles they have in our governance. This Institution will serve as a academic, research, and archieval center.
Flash Hyper-Dimensional Imaging System for Space Situational Awareness and Ballistic Missile Defense, Maui	Provides the capability for immediate, real-time kill assessment of a missile intercept and enhances space situational awareness utilizing hyper-dimensional digital snapshots to capture high resolution spatial, thermal, temporal, and spectral data across multiple spectral data bandwidths.	$6,000,000	Hnu Photonics	The Flash Hyper-Spectral Imaging System captures high resolution spatial, thermal, temporal, and spectral data to rapidly assess and characterize objects for space situational awareness. This technology is unique in providing a real-time kill assessment for missile defense testing and operational missions. Proof of concept activities include simultaneous thermal analysis, real-time data for damage assessments, and determination of ballistic missile warhead composition.
Hawaii Advanced Laboratory for Information Integration (HALI'I), Maui	Provides a service-oriented architecture-based solution to alleviate the challenges associated with cross-domain systems, networks and data to enable collaborative data sharing, data fusion, and data dissemination.	$4,000,000	Akimeka	After the attacks of September 11, 2001, it was abundantly clear that the nation's intelligence community needs to be able to share data and interoperate in a much more integrated fashion. In order to facilitate such data fusing and sharing, the HALI'I project will enable intelligence information across disparate classification domains and network interfaces to be exchanged by the intelligence community. HALI'I will use the U.S. Pacific Command theater of operations to develop and validate technologies associated with information fusion, dissemination, and protection.

Hawaii Federal Health Care Network, Hawaii	A competitive program that supports applied research, development and deployment of technology to improve access and the quality of care to service members, military families and impacted communities.	$25,000,000	competitve	AKAMAI II supports applied research, development and deployment of telehealth and healthcare technology, biotechnology, clinical informatics, VA/DoD systems interoperability, to improve access and the quality of care to service members, their families, and impacted communities. With a focus on programs that align closely with military medical requirements, a competitive process will be used to provide funding in Hawaii to develop advanced medical technologies and biotechnology research critical to our nation's military medicine and the warfighter. Priority will be given to innovative collaborations between Hawaii-based industries and the Department of Defense. Outside partnerships that help to bring unique expertise to research in Hawaii to solve military medical problems will also be an important factor.
Hawaii Integrated Information Command System, Kauai	Provides relevant, real-time situational information to all levels of command from the Hawaii National Guard to Hawaii State Civil Defense to civilian responders in the field.	$1,650,000	Raytheon Solypsis	Federal, state and local governments have been challenged with how best to alert and protect their citizens during crisis situations. A significant problem is the multi-level coordination required for timely and effective response. The prototype Hawaii Integrated Information Command System will address this need by providing relevant, real-time situational information to all levels of command from the Hawaii National Guard to Hawaii State Civil Defense to civilian first responders in the field.
Hawaii National Guard Counterdrug, Hawaii	Augments the National Guard's ongoing efforts to enhance drug interdiction at ports of entry and supports anti-drug programs targeting youths and the eradication of marijuana.	$3,000,000	Hawaii National Guard	Funding will allow the Hawaii National Guard to maintain a personnel end strength of 49 personnel. Loss of this funding would decrease personnel to 14. The full-time end strength of 49 personnel is made up of 27 Army National Guard soldiers including 8 that are currently deployed and 22 Air National Guard Airmen on full-time active duty status in support of Title 32, Section 112. The Hawaii National Guard Counterdrug Program supports 25 federal, state, and local law enforcement agencies (LEAs) or task forces and more than 50 community based organizations and other drug demand reduction (DDR) efforts.

Hawaiian Range Complex, Pohakuloa Training Area	Designs and implements operations of the Hawaiian Range Complex currently being supported by Joint Threat Emitter electronic warfare systems as part of an ongoing effort to provide joint service training and mission rehearsal capability on the Hawaiian Islands.	$2,000,000	Northrop Grumman	Several times a year, deployed aircraft carrier groups train en route to their operational theatre in the Pacific region via the Hawaiian Islands. Currently this air space provides no electronic warfare training for Navy pilots that will fly in regions of conflict. The closest electronic warfare training to Hawaii is in Alaska, resulting in large expenses to transit Hickam aircraft there for adequate training. As the Navy moves westward, putting additional carrier groups in the Pacific, it needs to populate the Hawaiian Range Complex with realistic training for combat pilots prior to deployment in the region on real-world missions. This project will design operations of the Hawaiian Range Complex with support from Joint Threat Emitter electronic warfare systems as part of an ongoing effort to provide joint service training and mission rehearsal capability on the Islands.
Hawaii Technology Development Venture, Honolulu, Hawaii	Provides competitive grants to high technology research projects for small businesses primarily in Hawaii.	$12,000,000	Multiple Recipients	The Hawaii Technology Development Venture (HTDV) was established to promote high technology businesses in support of current and future Navy and Department of Defense programs. HTDV specializes in identifying technological expertise resident in Hawaiian small companies, conducting outreach activities to those businesses and the Department of Defense, and training companies in the business, financial, and technical aspects of applying for and performing competitive development contracts for the Department of Defense.
High Accuracy Network Determination System-Intelligent Optical Network for Space Situational Awareness (HANDS-IONS), Maui	Delivers cost-efficient 24x7 global observation and surveillance of space assets and security threats using a network of ground stations connected to a central processing facility.	$10,000,000	Oceanit	The increased use of space for scientific, commercial, and military applications is creating an increasingly crowded orbital environment. Improved Space Situational Awareness is necessary to track and characterize satellites and debris to maintain safe space operations and improve threat management. The High Accuracy Network Determination System-Intelligent Optical Network for Space Situational Awareness (HANDS-IONS) provides unique Space Situational Awareness capabilities at significantly lower cost than other technologies.

Incident and Consequence Management and Situational Awareness and Fusion Environment (ICM-SAFE), Honolulu, Hawaii	Provides next-generation reconnaissance and situational awareness capabilities for improved consequence management for the 93rd Weapons of Mass Destruction Civil Support Team based in Honolulu, Hawaii.	$3,200,000	Cubic Corporation	The 93rd Weapons of Mass Destruction Civil Support Team, based in Honolulu, Hawaii has limited operational capabilities to track the position of personnel responding to chemical, biological, radiological, and nuclear attacks or natural disasters. They also have limited capability to monitor the status of the health of these first responders. ICM-SAFE would enable the monitoring of body temperature, heart rate, respiratory rate and the amount of time the person has spent in a danger zone.
Intelligent Decision Exploration (INDEX), Honolulu, Hawaii	Develops a net-centric, unmanned systems testbed toolset to improve the effectiveness and coalition interoperability of expeditionary force structures; leverages modeling and simulation, vehicle health, and space and other situational awareness information to enhance force protection during asymmetric and coalition operations.	$6,000,000	Referentia	Leveraging the Department of Defense's advantage in command, control, communications, and intelligence requires the defense of cyberspace, advanced network management, and net-enabled decision support tools. To support these efforts, the Intelligent Decision Exploration system provides a planning tool to enhance interoperability with coalition partners in particular. In addition, INDEX develops 3-D visualization of the battlespace, map interface, and improved sensor fidelities to improve operations of unmanned vehicles. The system also creates visualization of network traffic to improve computer network defense.
Joint Venture Education Program, Oahu	Provides funding for education programs, school repair and technology innovation to support military families.	$5,500,000	U.S. Pacific Command	Funds provide a forum for military leadership at the Pacific Command and the State of Hawaii Education Superintendant to collaborate regularly to ensure a positive, meaningful educational experience including a smooth transition for military dependents in and out of school. Special transition centers have been established in high schools with large numbers of military dependents to help with acclimation. Investments in textbooks, technology, and school repairs provide for positive learning environments. The Joint Venture Education Program (JVEP) is a modest investment that provides our deployed armed forces with peace of mind that their children will have a positive educational experience, and will excel in their studies. Partnerships between military units and public schools create lasting relationships that encourage greater understanding and support for our armed forces in our communities.

Low-Earth Orbit Nanosatellite Integrated Defense Autonomous Systems, Oahu	Develops a low-cost, rapid response launch vehicle and an in-space communications network of microsatellites to facilitate early launch detection.	$10,000,000	University of Hawaii	The Department of Defense's Operationally Responsive Space program is looking for ways to launch small satellite payloads quickly and cheaply. The Low-Earth Orbit Nanosatellite Integrated Defense Autonomous Systems (LEONIDAS) project is developing a capability at the Pacific Missile Range Facility on Kauai to launch small payloads into low earth orbit within four days of a request for around $8 million per launch vehicle. This would provide a low cost, rapid response capability that is not available today.
Marine Air-Ground Task Force Situational Awareness, Oahu	Supports the development and field test of a prototype situational awareness and tactical decision support system for a counter-sniper weapon system.	$3,000,000	Lockheed Martin	The Office of Naval Research is developing the Naval Expeditionary Overwatch system to enable smaller numbers of expeditionary sailors to detect, monitor, and engage enemy forces over large areas of land and water. The MAGTF Situational Awareness program is developing a prototype decision support system to integrate additional sensor packages, including the Scan Eagle UAV and acoustic sensors, to provide increased capability. The program also provides an integrated operational picture to higher level military operations centers.
Maritime Directed Energy Test and Evaluation Center, Kauai	Prepares the Pacific Missile Range Facility for future Navy maritime directed energy test and evaluation activities.	$6,000,000	Envisioneering	The Navy is conducting advanced research on a number of directed energy technologies, but testing these technologies in a maritime environment is essential to determining real-world performance. Currently, the Navy does not have a dedicated site to allow for the safe testing of directed energy technologies in the maritime environment. Funds would be used to study the requirements for establishing a test bed at the Pacific Missile Range Facility.

Maui Space Surveillance System (MSSS) Operations and Research, Maui	Supports state of the art Air Force electro-optical facility that combines operational satellite tracking, support for missile defense testing, and research and development activities.	$23,000,000	Boeing	For over 30 years, the Maui Space Surveillance System (MSSS) on top of Mt. Haleakala has been a premier site for tracking objects in space. Currently, through its primary mission for Air Force Space Command, MSSS combines large-aperture tracking optics with visible and infrared sensors to collect data on near Earth and deep-space objects. It houses the 3.67-meter telescope, known as the Advanced Electro-Optical System (AEOS), which is the United States' largest optical telescope designed for tracking satellites. The 75-ton AEOS telescope points and tracks very accurately, yet is fast enough to track both low-Earth satellites and ballistic missiles. AEOS can be used simultaneously by many groups or institutions because its light can be channeled through a series of mirrors to several independent coudé rooms below the telescope. Employing many sophisticated sensors, the telescope tracks man-made objects in deep space and performs space object identification data collection for the Department of Defense. Funding will provide operational sustainment of MSSS.
Microalgae BioFuel Project, Kauai	Demonstrates a new environmentally enhanced concept for the production of biofuels using microalgae that is converted into biodiesel, jet fuels and other high value co-products.	$9,200,000	Hawaii BioEnergy	This program will lead to a clean domestic source of fuel that could reduce our need for petroleum fuels in the next decade. It will enhance the Department of Defense's green initiatives by recycling carbon dioxide and cleaning up effluents. Implementation of the technology would improve our national security by minimizing oil imports and improving our economic independence.

Military Applications for Medical Grade Chitosan, Honolulu, Hawaii	Funding would continue the research and development of optimized anti-bacterial and anti-viral chitosan-based materials for improved treatment of military injuries and infections.	$4,000,000	Synedgen, Inc	Military personnel are exposed to a wide variety of drug resistant pathogens during deployment. Soldiers surviving battlefield injuries face another hurdle from secondary infections and wound contamination, which have dramatically increased mortality, morbidity and length of hospitalization for hundreds of soldiers. About 70 percent of bacteria that cause infections in hospitals are resistant to at least one commonly prescribed antibiotic. Formulated chitosan, which has been proven to effectively bind and kill most common multi-drug resistant bacteria, offers the potential to provide revolutionary improvements in wound care and treatment of infections. In addition to its antibacterial properties, formulated chitosan stimulates new tissue growth, while simultaneously inhibiting inflammatory response and scarring, responses concomitant with wound sepsis. Funding will advance development of the two most military-relevant formulated chitosan applications, including a topical wound spray to be applied in the field as a prophylactic agent to prevent wound infection, as well as at a medical care facility to treat hospital acquired infections. A second application under development
Mobile Localization, Honolulu, Hawaii	Identifies and locates possible threats/targets through the advanced application of mobile electro-optical/infrared camera sensors to enhance a commander's ability to understand and safely maneuver on the battlefield.	$5,500,000	21st Century Systems	In order to achieve tactical advantage, the U.S. military has invested heavily in the quantity and variety of detection sensors in a concerted effort to improve situational awareness and provide a fuller, more complete common operating picture. Placing sensors on mobile Army assets provides valuable situational awareness, but faces several significant drawbacks. First, no single sensor can detect and provide accurate location data and thus must be matched with other types of sensors, creating logistical challenges. Second, detection of a moving target with a sensor that is also moving makes accurate localization difficult, and in many cases, impossible. M-LOC is designed to address these challenges by processing and analyzing the sensor input from a single electro-optical/infra-red sensor type in order to detect, identify, and provide location data on suspected enemy threats.

Mobile Modular Command Center (M2C2), Honolulu, Hawaii	Provides communications, networking and command and control technologies for Marine Corps tactical missions and develops concepts of operations for Marine Corps early entry and command and control on-the-move missions.	$3,000,000	Multiple Recipients	*USA Today* highlighted the value of the mobile Modular Command Center (M2C2) technology saying it will "allow troops in the field to communicate with each other, their commanders, and even headquarters hundreds of miles away — all while driving over 30 miles per hour. Experts say the advanced satellite and wireless technology, developed in large part by Hawaii contractors, will save Marine lives in battle. It will also enable troops to communicate in areas where natural disasters like Hurricane Katrina...wiped out local infrastructure...The equipment...would enable war zone commanders to see where their troops are heading and how close they are to the enemy. Commanders could also use it to decide to move forward, pull out, or call in air and artillery support."
Multi-mission Deployable Optical System (MDOS), Maui	Enhances optical systems with the capability to perform daylight imaging, particularly for space situational awareness applications.	$6,000,000	Trex	Space is no longer a sanctuary for the United States in which to operate freely. For instance, in 2007, the Chinese demonstrated the ability to shoot down satellites, which resulted in a much more intense interest for the U.S. to enhance its space situational awareness capabilities. The Multi-mission Deployable Optical System (MDOS) will provide a significant enhancement for space operations with a capability to image space objects in daylight. MDOS will be transportable by C-17, so it can be deployed to regions of the world that have little to no space surveillance capability.
Multiple-Target-Tracking Optical Sensor-Array Technology (MOST), Kauai	Continues development of an extremely fast optical surveillance system designed to address missile defense sensor requirements to process and characterize 1,000 simultaneous images at well over 20,000 frames per second, per image.	$10,000,000	Oceanit	The Multiple-Target-Tracking Optical Sensor-Array Technology (MOST) fills a critical gap in missile defense technologies. While missile defense systems typically rely on high-cost radar and space-based sensors, MOST provides highly accurate data to the ballistic missile defense sensor suite by using networked optical sensors. The systems can be deployed on land, sea, and air to provide higher levels of target discrimination.

National Undersea Mobility Technology Integration Center, Honolulu, Hawaii	Supports a U.S. Special Operations Command unfunded requirement to support undersea mobility platforms, autonomous underwater systems, and undersea warfare weapons systems, including the establishment of a portable tracking and measurement range to evaluate system performance in littoral environments.	$6,000,000	Alaka'i Consulting	The National Undersea Mobility Technology Integration Center (NUMTIC) supports an important unfunded priority of U.S. Special Operations Command. The project will leverage prior invested resources of SOCOM and the Air Force to stand up a portable acoustic testing instrumentation capability to test and evaluate special operations platforms and systems in actual or surrogate environmental conditions. NUMTIC would be established in Pearl City, which already has the necessary pier facilities to load SOCOM undersea platforms on host submarines.
Pacific Airborne Surveillance and Testing, Kauai	Develops non-cooperative target identification techniques, advanced radar processing, radar transmitters, and open architecture environment for early warning aircraft and maritime domain awareness. In addition, the program will develop a very high field-of-view aerial camera system for a UAV and a lightweight low-cost sensor for determining location and orientation of UAV's for persistent surveillance applications.	$20,000,000	Multiple Recipients	The Office of Naval Research is developing technologies to enhance Navy and U.S. Coast Guard airborne surveillance capabilities. The Pacific Airborne Surveillance and Testing (PAST) program provides competitive awards to multiple companies to improve radar capabilities, such as advanced processing, improved transmitters, and target identification to improve maritime domain awareness. In addition, the project supports development of the True North Module to provide more accurate location and orientation data, which is essential to providing accurate surveillance and targeting data. The Module is a lightweight, low-cost sensor which analyzes stellar data to provide improvements over inertial navigation systems for persistent surveillance operations by unmanned aerial vehicles. Transition efforts are underway to use the module to provide improved orientation data to the Aegis fleet.
Pacific Alternative Technology Exploitation, Honolulu, Hawaii	Provides the U.S. Pacific Command with a new engagement tool for lesser developed countries throughout the Pacific region that will build mutual capacity for bilateral and multilateral operations in humanitarian assistance and disaster relief.	$2,000,000	Multiple Recipients	This project will enhance the stability of the Pacific theater, with the goal of developing and transferring technologies to lesser developed countries in the Pacific region in order to increase their capacity to help themselves. This program will lessen dependence on U.S. direct assistance to these countries and provide the U.S. with more effective and less costly engagement capabilities in this important region of the world.

Pacific Island Unexploded Ordnance Detection using Air and Ground Methodologies, Honolulu, Hawaii	Demonstrates technologies that can rapidly narrow the search and detection of unexploded ordnance (UXO) by integrating airborne and ground techniques to identify UXO for remediation on the Hawaiian Islands.	$3,000,000	University of Hawaii	UXO detection is an acute problem for Hawaii due to over 60 years of intense use of available test and training ranges that has resulted in high UXO presence on the islands. Detection of UXO is critical to the transfer of property from the military to the communities. The trouble is that detecting UXO is very difficult and can be very costly. This project will develop methodologies that can rapidly narrow the search and detection of UXO to reduce the amount of time to delineate areas for remediation, and reduce expensive remediation of areas where UXO was incorrectly detected. The University of Hawaii is developing technologies to integrate airborne and ground techniques to find UXO in order to remediate it more quickly than current methods.
Pacific Region Interoperability Test and Evaluation Capability, Kauai	Creates a developmental and operational testing environment to enable distributed test and evaluation in the Pacific.	$4,000,000	SAIC	The Pacific Region Interoperability Test and Evaluation Capability (PRITEC) will enable test and evaluation (T&E) assets in the Pacific to interoperate with other ranges, test facilities, and laboratories as part of the Department of Defense's distributed T&E capability. PRITEC supports the DOD's requirement to "test like we fight." It leverages existing programs, including the Test and Evaluation Training Enabling Architecture, to provide interoperability between ranges, and the Joint Mission Environment Test Capability, the DOD's infrastructure for testing in a joint environment. In addition, PRITEC enhances T&E infrastructure in the Pacific to better support integrated ballistic missile defense tests and is developing telemetry system technologies that will enhance capability and reduce T&E costs for all DOD programs.

PanSTARRS, Maui	Combines relatively small mirrors with very large digital cameras to observe the entire sky several times each month in order to discover and characterize Earth-approaching objects and enhance space situational awareness capabilities.	$11,000,000	University of Hawaii	The Panoramic Survey Telescope and Rapid Response System (PanSTARRS) is an innovative design for a wide-field imaging facility being developed at the University of Hawaii. By combining relatively small mirrors with very large digital cameras, UH is developing and deploying an economical observing system that will be able to observe the entire available sky several times each month. The immediate goal of PanSTARRS is to discover and characterize Earth-approaching objects, both aseroids and comets, that might pose a danger to our planet. The huge volume of images produced by this system will provide valuable data for many other kinds of scientific programs and for the Department of Defense's space situational awareness mission.
Pearl Harbor Navy Shipyard Equipment Modernization, Honolulu, Hawaii	Funds five small projects to enhance the capabilities of Pearl Harbor Navy Shipyard, including a casualty control system, 40-ton mobile crane, raw liquid waste/liquid waste collection tank, bending roll machine, and a 3-inch pipe bender.	$4,200,000	Pearl Harbor Navy Shipyard	Pearl Harbor Navy Shipyard provides critical services to Navy vessels. In order to reduce costs and enhance their capacity to do this important work, the shipyard has identified several projects that will enhance their capabilities. The funding will go toward five small projects: casualty control system to reduce costs for submarine maintenance, a 40-ton mobile crane to minimize production delays, replacement of the waste water handling capacity which is a core function in submarine maintenance, a bending roll machine to improve work efficiency, and a 3-inch pipe bender to ensure submarine maintenance is done more efficiently.

Real-time Optical Surveillance Applications, Maui	Provides pathfinder research, technologies, and demonstrations for the next generation of space situational awareness electro-optical assets.	$5,000,000	Pacific Defense Solutions	Real-time Optical Surveillance Applications (ROSA) technologies are being developed to address five of the top six Space Situational Awareness (SSA) shortfalls identified by the Air Force. The efforts under the ROSA program will focus on several objectives. The first objective is the development of SSA algorithms for time resolved photon counting detectors. These detectors are the most advanced in existence for detecting faint objects such as small satellites. The second is the development of capabilities for integrated tasking and fusion of networked electro-optic sensors. The third objective provides research into the extraction of SSA information such as satellite orientation from radiometric signatures. This research is especially important as it can provide SSA information from objects at very long distances or from small aperture systems. The fourth research area intends to develop new algorithms and technologies for imaging satellites during daylight hours (in sun-synchronous orbits). Most adversarial satellites of interest are sun-synchronous and more information is needed to determine what these satellites are doing during their peak observing times.
Strategic Materials, Kauai	Produces technologies for the manufacture of low-cost, corrosive-resistant ceramics and ceramic matrix composite materials and continues research and manufacturing of hard, corrosion-resistant optical coatings for mirrors with space, missile defense, and commercial applications.	$6,000,000	Trex	The strategic materials program supports efforts to advance technology to chemically grow extremely pure silicon carbide for critical defense applications. This material is ideally suited to a range of optical applications, including space surveillance and seeker optics, fast steering mirrors, and other dual-use items. Funding will manufacture prototypes to achieve additional qualifications and mature the program to Technology Readiness Level 6.

Theater Undersea Warfare Initiative, Honolulu, Hawaii	Develops a command and control system for conduct of Theater level anti-submarine warfare, tools for Theater Commander planning, situational awareness, reconstruction, and rehearsal simulations.	$7,500,000	Lockheed Martin	The Theater Undersea Warfare initiative addresses key challenges in maintaining situational awareness of the undersea battlespace. The tools developed by the program assist in bridging operational and tactical awareness and performing theater training missions. Prior efforts by the program have received Navy program of record funding for capabilities such as a search effectiveness map and a sonobouy planning tool. Planned efforts include development of synthetic training capabilities for theater anti-submarine warfare.
True North Module for Persistent Surveillance UAV Payloads, Maui	Develops a very high field-of-view aerial camera system for a UAV and a lightweight low-cost sensor for determining location and orientation of UAV's for persistent surveillance applications.	$5,000,000	Trex	Accurate location and orientation data is essential to providing accurate surveillance and targeting data. The True North Module is a lightweight, low-cost sensor which analyzes stellar data to provide improvements over inertial navigation systems for persistent surveillance operations by unmanned aerial vehicles. Transition efforts are underway to use the module to provide improved orientation data to the Aegis fleet.
Undersea Special Warfare Engineering Support Office, Honolulu, Hawaii	Identifies the benefits, structure, and functions of establishing an office in Pearl Harbor and provides research and development funds to rapidly transition new technologies to support special operations forces undersea special warfare capability requirements.	$5,000,000	U.S. Special Operations Command	The U.S. Special Operations Command has announced a consolidation of undersea special warfare capabilities in Pearl Harbor, but engineering services to support the reorganization have not relocated. Co-location of operational units, their equipment, and engineering support would greatly improve response times for technical problems and enable continuous improvement to equipment used by the Special Operations community.
USS Missouri, Honolulu, Hawaii	Supports urgent repairs and renovation of the USS Missouri Battleship	$6,500,000		Funds will continue to support the current restoration and preservation of the USS Missouri Battleship. These repairs are essential for the USS Missouri to complete its renovation in a timely manner in order to cause the least disruption to the visitors experience which is a major economic factor to the tourist industry in Hawaii.

Virtual Onboard Analyst for Multi-Sensor Mine Detection (VIRONA), Honolulu, Hawaii	Develops a self-learning, adaptive, multi-sensor, knowledge-based fusion decision-aid capability and creates a means to fuse knowledge-based information with multi-sensor data through a virtual onboard analyst that replicates the capabilities and flexibility of an experienced mine countermeasures analyst.	$4,000,000	BAE	The Littoral Combat Ship includes key mine countermeasures capabilities, including the use of Vertical Take-Off and Landing tactical unmanned aerial vehicles to detect minefields. In order to reduce training costs and manning levels, the Virtual Onboard Analyst for Multi-Sensor Mine Detection (VIRONA) project will replicate the capabilities and flexibility of an experienced mine countermeasures analyst operating in real time. The system also includes modeling, simulation, visualization and analysis tools to provide effective training in complex scenarios.
Wave Energy PowerBouy Generating System, Marine Corps Base, Kaneohe Bay	Continues demonstration of wave power bouys off Marine Corps Base, Kaneohe Bay in order to provide electric power to the base.	$4,000,000	Ocean Power Technologies	This clean energy program takes advantage of one of Hawaii's most prevalent assets - waves. These high-tech bouys that sit off-shore Kaneohe Bay are transferring energy created by waves to a power supply to support the energy demands of the Marine Corps base. The project could ultimately lead to a more efficient and self-reliant method of delivering power to Hawaiian Electric's electrical grid in order to reduce reliance on foreign petroleum imports.