



From the sea floor to outer space:

The value of Florida Ranges to
existing and future military missions.

Spring 2022

Produced by

THE
Roosevelt
GROUP

Report commissioned by the
Florida Defense Support Task Force

Published in partnership with the
University of West Florida

Thank you for your support.

The Roosevelt Group (TRG) would like to thank all defense communities across the State of Florida for their time, insights, and contributions to this report. Throughout this product, we strive to incorporate a holistic view of the State and its unmatched value to the Department of Defense through current capabilities, ongoing innovation, unique geography, and commitment to the nation's security. These insights would not be possible without the interviews the TRG team conducted with members of the Florida Defense Support Task Force and the Florida Defense Alliance. Thank you all for finding the time to meet with our team and providing your valuable input.



TRG would also like to thank the University of West Florida for their management of and partnership throughout the grant provided for this project.

“Florida has the most remarkable collection of military operations, test, and training ranges in the Nation for emerging threats. The ranges include space and dimensions for cyber ranges, frequencies, electronic warfare assets, undersea capabilities, surface, sea and outer sea areas such as the launch corridors from Cape Canaveral that range past the equator, and current development work in areas such as underwater networks, and Live, Virtual and Constructive environments. Future missions are supported by NASA testing areas and Space Launch and Recovery areas. State or other agency ranges are also available, such as unique law enforcement ranges, and intelligence and homeland security areas, plus NOAA testing areas and applications for Customs and Border Patrol capabilities.

The whole-of-Florida assembly of multi-domain and traditional space, such as abundant airspace, makes the State the ideal focus area for integrating the Air Force’s Advanced Battle Management System, the Navy’s Project Overmatch efforts, the Army’s Project Convergence projects, and 5G spectrum development. Florida assets that contribute to experimentation and exercises at the tactical and operational level also should be considered.

We cannot find a better partnership environment with industry and academia. The environment and all-domain space is simply remarkable from the seafloor to outer orbits in space.”

*Chris Middleton & Rick Miller,
Florida Defense Alliance (May 2022)*

Overview

In the year 2022, the global security environment is changing at an unprecedented pace. United States power projection—taken as a near certainty since the fall of the Berlin Wall and dominant victory in the first Gulf War—is being challenged by peer and near-peer competitors, several of whom possess nuclear weapons. Russia’s war in Ukraine and China’s posturing regarding the South China Sea emphasize this shift. In response, DoD is realigning its focus from post-9/11 low-intensity, counter-insurgency operations toward the threat posed by large state actors. This dynamic strategic environment and a profusion of new technologies are driving unprecedented change in the nature of warfare. With the ubiquity of modern information comes a growing acceptance of the power of networked, multi-domain combat operations. The Armed Forces have embarked on a coordinated effort to integrate virtually every type of national defense capability. A new era of “Jointness” has arrived.

The Florida range of the future will necessarily be open-architecture with common data standards to facilitate Joint Force and Coalition compatibility and interoperability. It will make use of capabilities such as the Common Range Integrated Instrumentation System (CRIIS), incorporate high-fidelity virtual simulators, representative land/sea/aerial targets, directed energy test capabilities, and connectivity with other open-air ranges, the National Cyber Range Complex (NCRC), and future orbital ranges. It will possess directed energy test capability, and the capacity to host long-range and hypersonic weapons test and training, as well as autonomous collaborative vehicles and swarming munitions. It will be tailorable and re-configurable to facilitate component-level test and training, large-force experimentation and JADO/JADC2 validation, and real-world mission rehearsal in operationally representative conditions. It will host multi-level security environments, and ensure cyber resilience of the integrated range and future JADC2 network.

In short, Florida’s range-of-the-future will ensure America’s global power is not limited by its test and training environments, but is fully empowered to leverage the talent and ingenuity of the best testers and warfighters on the planet.



Operation Valiant Shield (shown here) focuses on integration of training in a blue water environment. Such exercises assist U.S. forces in developing regional and global power projection capabilities. Florida provides a multi-faceted training environment that offers similar capabilities to integrate and prepare forces for the shifting global order.

Source: [Department of Defense Indo-Pacific Command \(2020\)](#)

“Future success for the US military must be built on a foundation of joint test and training—across the barriers posed by domains and services. Florida ranges possess all the tools future leaders will need to build and train the forces America needs.”

*General (Ret.) Mike Holmes,
Former Commanding General of
Air Combat Command*

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Executive Summary

The State of Florida offers the Department of Defense the premier capabilities needed for the All-Domain Range of the Future.

FLORIDA is home to numerous test and training and cyber ranges for DoD, including a national asset with the Major Range Test and Facility Base (MRTFB). The State also offers a unique blend of geography, range access, academic and defense industry support, policy advocacy, and infrastructure and investment. Florida enjoys superb weather for military test and training, a wealth of talent and legacy of innovation, and a state-wide community that embraces its role in national security.

For these reasons, Florida ranges are already home to many critical efforts within DoD, including unique armament, cyber, command and control, sub-surface, and Special Operations development and training environments. Florida ranges specialize in

research, development, test, and evaluation (RDT&E), Operational test and evaluation (OT&E), as well as live-fire test and training. They constitute a fertile environment for tactics, techniques, and procedures (TTP) development, battlefield concepts of operation (CONOPs) exploration and refinement, and campaign-level training and rehearsal. **All of the required ingredients for world-class integrated air, space, cyber, sea, and land power reside in the State of Florida, the surrounding waters, its airspace, and its corridors to the orbital environment.**

Seizing the power of Florida ranges, the Military Services have focused several game-changing capability development events within the state. Large-force developmental exercises are particularly well-suited to the Gulf of Mexico and Eastern Ranges. The U.S. Air Force (USAF) chose the Eglin Gulf Test and Training Range (EGTTR) for its inaugural Advanced Battle Management System (ABMS) demonstration, which integrated air, sea, and land elements to validate innovative concepts of battlefield connectivity. Follow-on ABMS developmental efforts have included the linking of Florida ranges across geographic boundaries to other continental ranges, illustrating Florida's unique role within the broader capability development enterprise.

Building on a long legacy of success, Florida's ranges remain a key component of the rigorous, disciplined methodology for combat system development, training, and employment. The Eastern range supports a large volume of space launch activity with an unprecedented history. The Atlantic and Gulf regions are hotbeds of U.S. Navy (USN) test and training, including weapons development, variable depth sonar events, mine warfare test and evaluation, sea trials, unmanned systems operations, and war-at-sea exercises. Panama City, for example leads offensive and defensive sea mining, Littoral warfare including amphibious

FLORIDA MILITARY FACTS

Total Statewide Economic Impact \$96.6 B	
Percent of Florida Economy	8.5%
Statewide Direct and Indirect Jobs	860,221
Buildings Owned by Military ¹	5,992
Total Acreage (all installations) ¹	522,734
Plant Replacement Value ¹	\$32.5 billion
Military Personnel ²	69,290
Civilian Personnel ²	38,095
Military Reserve ²	33,586
National Guard Full-time ³	2,539
National Guard Traditional Guardsmen ³	10,684
Total Veterans Living in Florida ⁴	1,517,442
Total Military Retirees Living in Florida ⁵	205,132

Source: Enterprise Florida "Florida Defense Industry Economic Impact Analysis (January 2022)"

Florida Range of the Future

The Florida range-of-the-future will enable many test and training activities currently not possible with existing DoD ranges, including the following:

- **An anti-access/area denial (A2AD) defeat scenario**, centered on an operationally representative, theater-level battlespace supporting rehearsal and investigation of alternatives to achieve campaign objectives.
- **A theater-level littoral defense scenario** involving all-domain/all-service coordination and operations. Similar to the A2AD scenario mentioned above, the future range will enable foreign partners, to experiment with defensive strategies and rehearse large force-on-force territorial defense scenarios.
- **Special Ops littoral ingress to a contested tactical target area.** The range will provide multi-domain Air, Sea, and Space support, including coordinated electronic warfare and kinetic fires, to neutralize key elements of a tactical A2AD target set.
- **Development, including test and evaluation, of long-range hypersonic weapons.** The range will consist of modern, interconnected tracking, telemetry, and scoring systems dispersed across a wide area of over-water and coastal land ranges.
- **Autonomous systems testing.** The range will be the backbone of large footprint, high-risk developmental environments involving Autonomous Collaborative Platforms (ACPs) that operate in close proximity with state-of-the-art human-operated systems.
- **Future Joint architecture development**, including JADO/JADC2 experimentation and demonstration. The range will enable development and validation of communication networks and data management systems designed to get critical sensor-to-shooter information to the right user at the right time.
- **Use of integrated ranges to simulate physical transition from one domain to another in battle.** The future range will include a space launch corridor to link combat environments extending from the surface, through the air and cyber domains, and into the orbital environment.
- **Support of next-generation nuclear systems.** The range will enable component and platform level development and sea trials, as well as integration of next-generation nuclear command, control, and communication (NC3) systems into the global JADC2 architecture.

capabilities, and unmanned Surface vehicle development and testing. These unique resources are also home to much of US and coalition Joint Task Force training.

Along the peninsula are land bombing and gunnery ranges that have been a mainstay of east coast training and weapons development for decades, including Pinecastle and Avon Park. The unique littoral aspects of the Gulf Coast provide an ideal training area for Special Operations Forces from the panhandle to Key West. For years, the USN and USAF have conducted building-block and large-force air combat training events in the Gulf. The military services have also collaborated to test cruise missiles launched from the Atlantic range, traveling hundreds of miles across protected airspace to impact on the land ranges of the panhandle. The 180,000 square miles of overwater airspace in the Gulf Range offer the only environment in the continental U.S. capable of supporting end-to-end development of long-range hypersonic weapons, autonomous cooperative platforms, and autonomous swarming weapon systems.

Given its unique location, natural resources, and military presence, Florida's ranges provide the perfect operating environment for execution of the U.S. National Defense Strategy today. But these ranges must continually modernize to suit the rapidly evolving global security landscape. Countering America's adversaries in the future will require a more agile, integrated environment for weapons system development and training. This environment will span warfighting domains and become the incubator for future military capabilities and employment concepts, rapidly integrating them into JADO doctrine and the evolving JADC2 architecture.

The following pages will provide a unique, in depth view of Florida's ranges and installations as well as expert recommendations to position the State as a leader in DoD range modernization and a testbed to employ JADC2.

Creating the All-Domain Range of the Future

Global Security and Joint All-Domain Operations

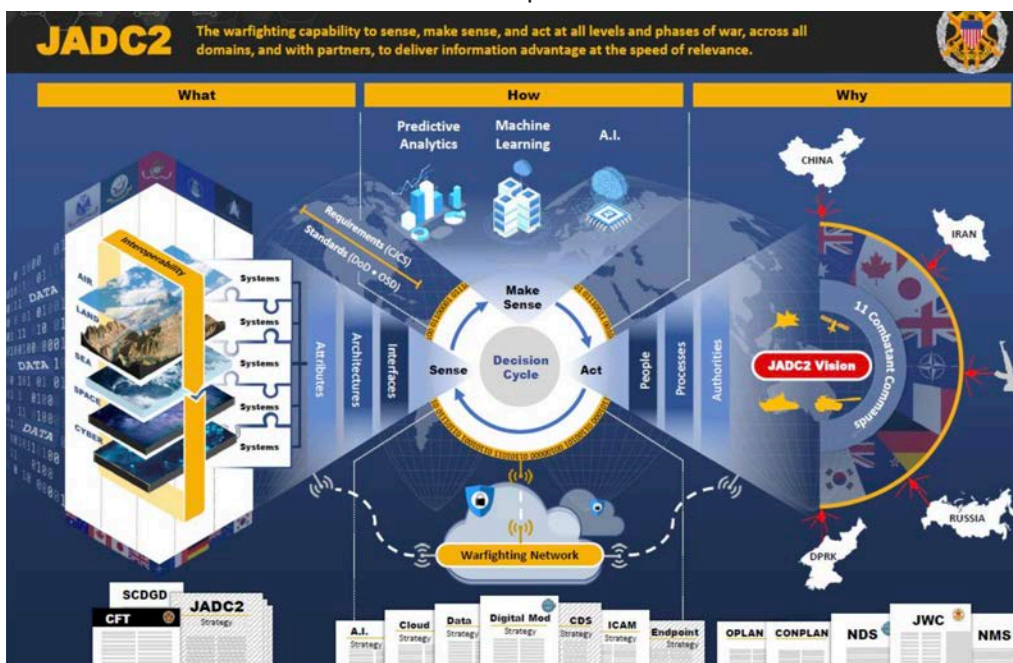
In the year 2022, the global security environment is changing at an unprecedented pace. United States power projection—taken as a near certainty since the fall of the Berlin Wall and dominant victory in the first Gulf War—is being challenged by peer and near-peer competitors, several of whom possess nuclear weapons. Russia’s war in Ukraine and China’s posturing regarding the South China Sea emphasize this shift. In response, DoD is realigning its focus from post-9/11 low-intensity, counter-insurgency operations toward the threat posed by large state actors. This dynamic strategic environment and a profusion of new technologies are driving unprecedented change in the nature of warfare. With the ubiquity of modern information comes a growing acceptance of the power of networked, multi-domain combat operations. The Armed Forces have embarked on a coordinated effort to integrate virtually every type of national defense capability. A new era of “Jointness” has arrived.

“The US is necessarily moving away from domain-specific and platform-specific capabilities.”

The concept of Joint All-Domain Operations (JADO) is not new but has emerged in recent years as the one true competitive advantage of the United States and its allies and partners. The US is necessarily moving away from domain-specific and platform-specific capabilities. The linking of individual platforms, systems, and Service missions across domains opens an entirely new, innovative, and powerful set of battlefield alternatives. The concept of platform-vs-platform conflict has been replaced by integrated firepower of individual systems into a vast, complex, resilient, networked system enabled by nearly unimaginable quantities of data. A digital transformation is underway in DoD and the architecture it enables will create the means of executing a new level of Joint operations, through JADC2.

JADC2 has also been evolving in recent years. Each Service has embraced its potential and devoted its own resources to build this new command and control architecture and create the CONOPs that will harness its power. The JADC2 framework will provide the network, data

storage and analysis, data transmission, and decision superiority that connect massive, global data sets—in theory, from an infinite number of sources. This data will then enable the finite number of all-domain capabilities a commander can employ to create desired battlefield outcomes, from tactical to campaign-level engagements.



Source: DoD Summary of the Joint All-Domain Command and Control Strategy (March 2022)

Development of Next-Gen Department of Defense Capabilities

HARNESSING the power of integrated domains and Joint missions requires a far more complex methodology than traditionally employed by the military services. New techniques are being created to develop, test, assess, and train with the synergistic power of networked warfare enabled through JADC2. A new era of DoD “capability development” is emerging which leverages a legacy of creating exquisite individual systems to build new, cross-domain, networked capabilities with exponentially more powerful battlefield effects.

This new era of capability development demands a new era of test and training ranges. To meet the accelerating demands of the global security environment, future ranges must seamlessly integrate all warfighting domains. They must model the complexity and fidelity of the real-world battlespace to enable rapid development and testing of critical JADO/JADC2 components.

“This new era of capability development demands a new era of test and training ranges.”

Future ranges must provide an environment of layered security and data integrity as the U.S. and its allies move deeper into the digital domain. These ranges must also replicate the scope and intensity of global wartime operations to create a training environment that harnesses the power of the JADC2 architecture to explore new CONOPs that lead to decisive battlefield advantages.

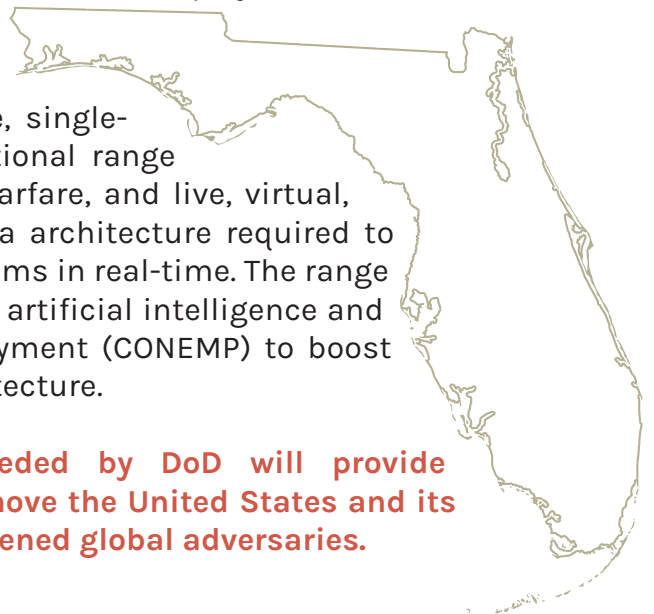
Fulfilling the demand placed by JADO/JADC2 on the ranges of the future requires DoD to build upon the ranges we currently have, integrate them to better replicate the modern battlespace, and invest in the additional range capabilities needed to fill future test and training gaps. Because of the power of networked warfare, physical “open-air” ranges will no longer be sufficient to meet these needs. The all-domain ranges of the future must harness the combined power of live, virtual, and constructive (LVC) environments to verify and validate the synergistic power of JADO, and to enable our warfighters to train for victory in these environments.

Florida’s Range of the Future

THE Florida range of the future must provide demanding, high-fidelity, next-generation environments for the development of relevant Joint warfighting capability. They must also facilitate a wide range of advanced training, from tactical employment exercises to theater-level rehearsals.

These next-generation range environments will require integration and interoperability of disparate, single-mission range resources, the development of additional range capabilities—including advanced cyber, electronic warfare, and live, virtual, and constructive elements—and creation of the data architecture required to support collection and assessment of dozens of systems in real-time. The range of the future will also facilitate skillful application of artificial intelligence and machine learning techniques to Concepts of Employment (CONEMP) to boost decision superiority within the maturing JADC2 architecture.

The integrated Florida “range-of-the-future” needed by DoD will provide unprecedented test and training environments to move the United States and its partners ahead of increasingly powerful and emboldened global adversaries.



Recommendations

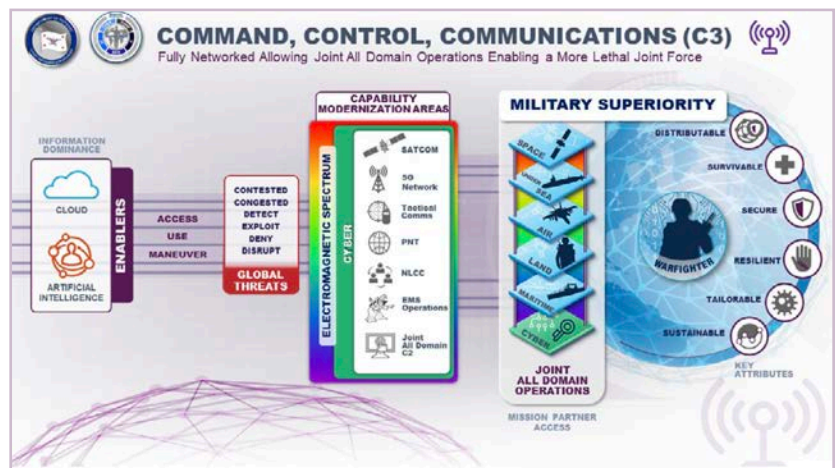
To maximize the value of Florida’s ranges to the Department of Defense, the State and the Services can harness the available capacity today while building the Integrated All-Domain Range of the Future by leveraging the existing partnerships and installations.

Harness Available Capacity & Modernize Florida’s Ranges

The DoD and the State of Florida should commit to resourcing current modernization efforts in order to increase Florida’s range capability and capacity to meet current and future test and training requirements. These modernization efforts should maintain a vision and growth path to future range requirements and include:

- Enhancements in range utilization to better capitalize on limited land, air, and sea range space, including initiatives such as the Gulf Range Enhancement, which will expand existing air space and improve airspace deconfliction.
- The acquisition of new airborne communication relays and range clearing aircraft.
- The establishment of coastal relay sites and other land-based range infrastructure for better coverage of the Gulf of Mexico and long-range operations.

Source: [DoD C3 Modernization Strategy](#)
(September 2020)



Sustain Mission Assurance

The DoD and the State of Florida should ensure the nation’s most prized natural resources are available for essential military missions first, while striving for compatibility with other users and stakeholders. This recommendation includes:

- Make the military mission line (MML) permanent in law by establishing a moratorium on oil and gas exploration and drilling in the Eastern Gulf of Mexico.
- Be fully engaged with the OSD-led Military Aviation and Installation Assurance Siting Clearinghouse to ensure future commercial real estate development is compatible with the development and use of the Florida range-of-the-future.
- Preserve the airspace above Florida’s ranges for military test and training missions, such that expansion of commercial air travel is compatible with military requirements for manned and unmanned capabilities.
- Assess existing and future sea lanes for compatibility with the range of the future, and establishing cooperative arrangements to facilitate commerce while preserving military missions, with range utilization and effectiveness as key metrics.
- Be fully engaged with and supportive of Sentinel Landscapes in Florida whose partners are collaboratively implementing initiatives to protect installation missions, maintaining compatible working lands and conserving listed species and their habitats.

Develop the Integrated All-Domain Range of the Future

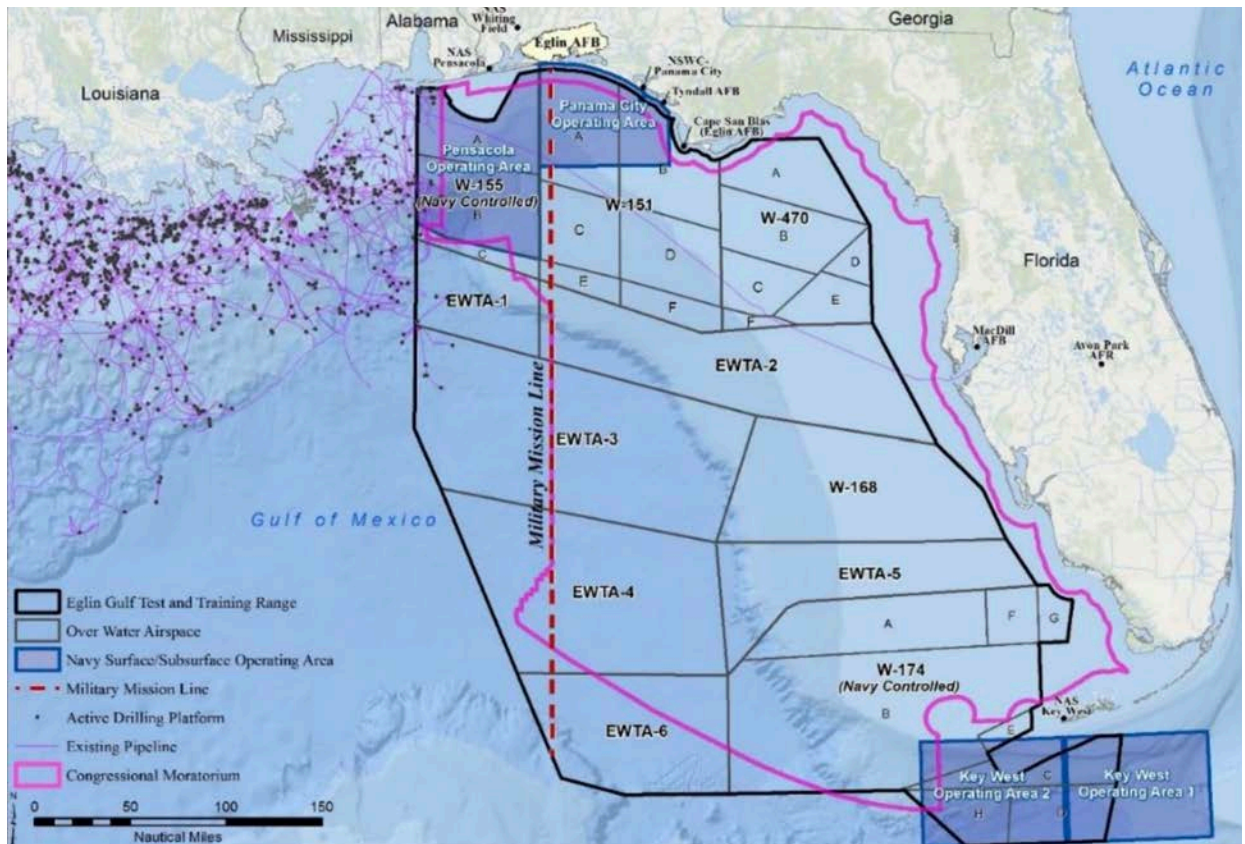
The DoD and the State of Florida should establish mission-driven, all-domain requirements for future ranges. TRG suggests creating road maps for developing and resourcing the infrastructure, technology, and human capital required to develop JADO/JADC2 capabilities and training environments. This recommendation includes:

- Grow Florida’s ranges to support JADC2 environments through coordinated and realistic range development plans such as “EGTTR Max.” These plans, at a minimum, should include: undersea fiber connectivity between range resources; data transmission and relay to surface, air, and space assets; wide-area telemetry and flight termination capabilities; and multi-level security infrastructure.
- Build scalable, next-generation multi-level security facilities, IT systems and data architectures. Ensure common data standards across ranges, platforms, and command and control systems to support a “plug & play” approach to the use of Florida ranges.
- Establish a dedicated funding priority in the DoD budget to bring advanced electronic capabilities to Florida ranges. Compliment the EW assets at other national ranges (e.g. NTTR) to increase capacity to meet Joint capability development and training needs.
- Integrate ranges across each warfighting domain to replicate the real-world all-domain environment of modern warfare. Make the transition between air, space, cyber, surface, and sub-surface ranges seamless, to facilitate Joint training and capability development.
- Establish aggregated ranges as fertile environments for JADO/JADC2 experimentation, prototyping, and large-force test events. Maintain a forward-looking range culture to link test and training environments and leverage future state-of-the-art technologies, to include artificial intelligence and machine learning.
- Develop a detailed investment roadmap for Florida ranges within the State and with the DoD.

Preserving the Military Mission Line

Florida’s ranges would be heavily affected should the existing oil and gas exploration moratorium be lifted. The MML protects the unmatched test and training ranges by preventing exploration inside of areas vital to DoD activities.

Source: DoD Report “Preserving Military Readiness in the Eastern Gulf of Mexico” (May 2018)



Florida's Military Ranges

THE fundamental purpose of any military range is to provide a controlled, repeatable environment for the development of war-winning capabilities. A range must have the support equipment and infrastructure to conduct high fidelity research, test, demonstrations, and experiments. It must also provide an operationally relevant environment for military training missions. This broad spectrum of range use must be matched by a broad spectrum of range capabilities.

For example, a new kinetic weapon may need an instrumented ground test range to assess its fragmentation pattern or hard-target penetration. Submarine and ship crews may require a water range to test a new countermeasure, develop new tactics, or train for global sea operations. Similar tasks associated with the development of tactical airpower are deeply dependent on large areas of protected, sanitized airspace. Special Operators need to swiftly and clandestinely transition between domains to achieve important national security objectives. These and many other use cases reveal the importance of the range equities across the State of Florida. Each of the military services relies on Florida's ranges, whether operating independently to organize, train, and equip its warriors, or in concert as a Joint force supporting the Combatant Commands.

Regardless of domain, each military mission requires a representative environment in which to develop new systems, conduct building-block training, and integrate new capabilities into the doctrine of JADO. In order to harness the inherent power of a networked architecture, today's warfighters must have a high-capacity, integrated, all-domain range to practice large-force employment against any potential adversary, effectively rehearsing real-world combat scenarios.

Florida provides each of these environments and more. The Florida Range of the Future will integrate domain-specific ranges within the state and across DoD. At maturity, it will provide the environment needed to develop, train with, and rehearse employment concepts that give the United States and its allies a decisive advantage. Florida's major ranges, the cornerstone of the future integrated, all-domain DoD range, are listed below.

Land Ranges

- Avon Park Air Force Range
- Navy Pinecastle Range Complex
- Camp Blanding Joint Training Center

Air and Space Ranges

- Eastern Range Complex
- Eglin Gulf Test & Training Range
- Jacksonville Range Complex

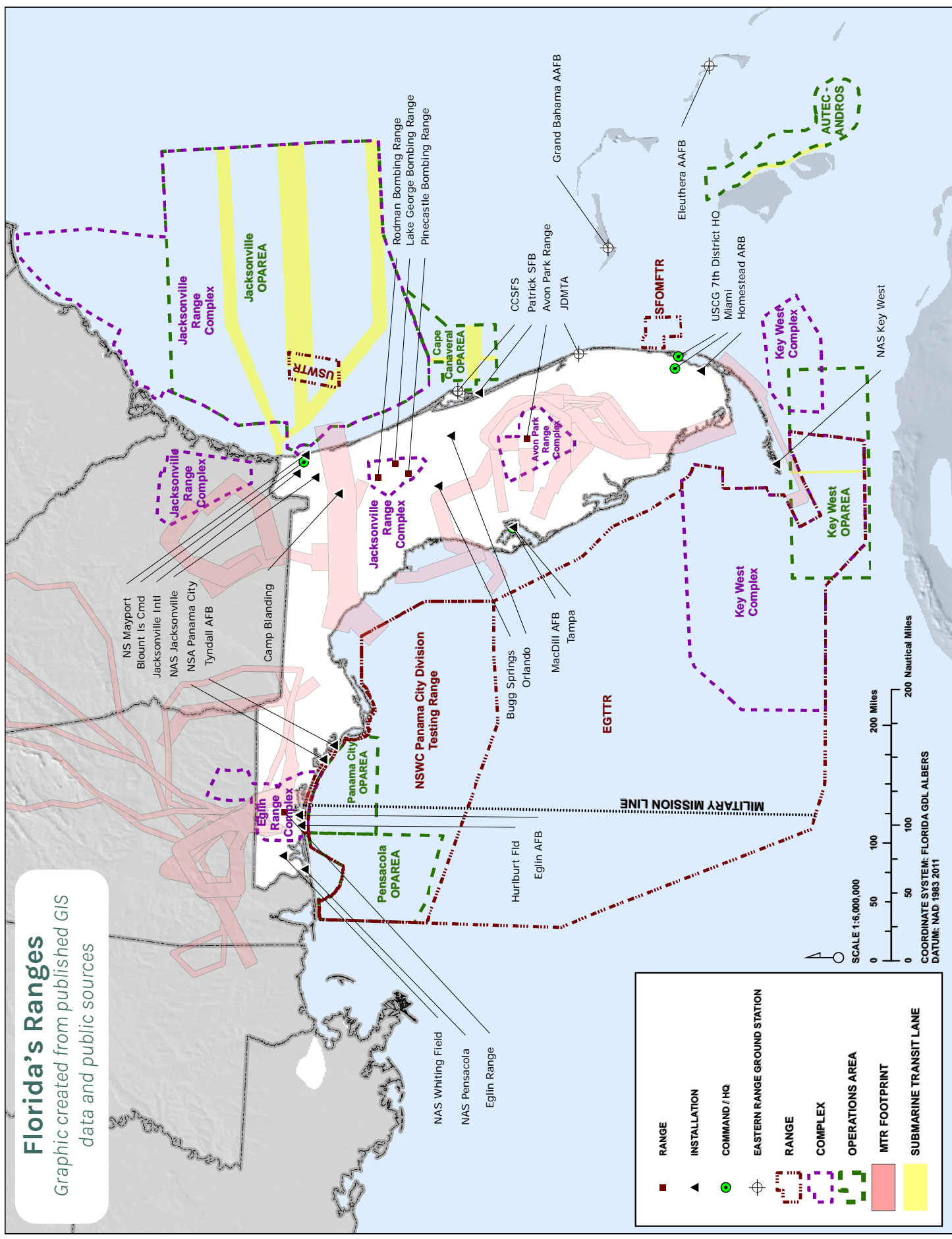
Surface & Subsurface Ranges

- Bugg Spring Undersea Warfare Center
- Jacksonville Shallow Water Training Range
- Panama City Operations Area
- South Florida Ocean Measurement Facility
- Atlantic Targets and Marine Operations Key West

Cyber Ranges

- National Cyber Range Complex

Florida's Ranges
Graphic created from published GIS data and public sources

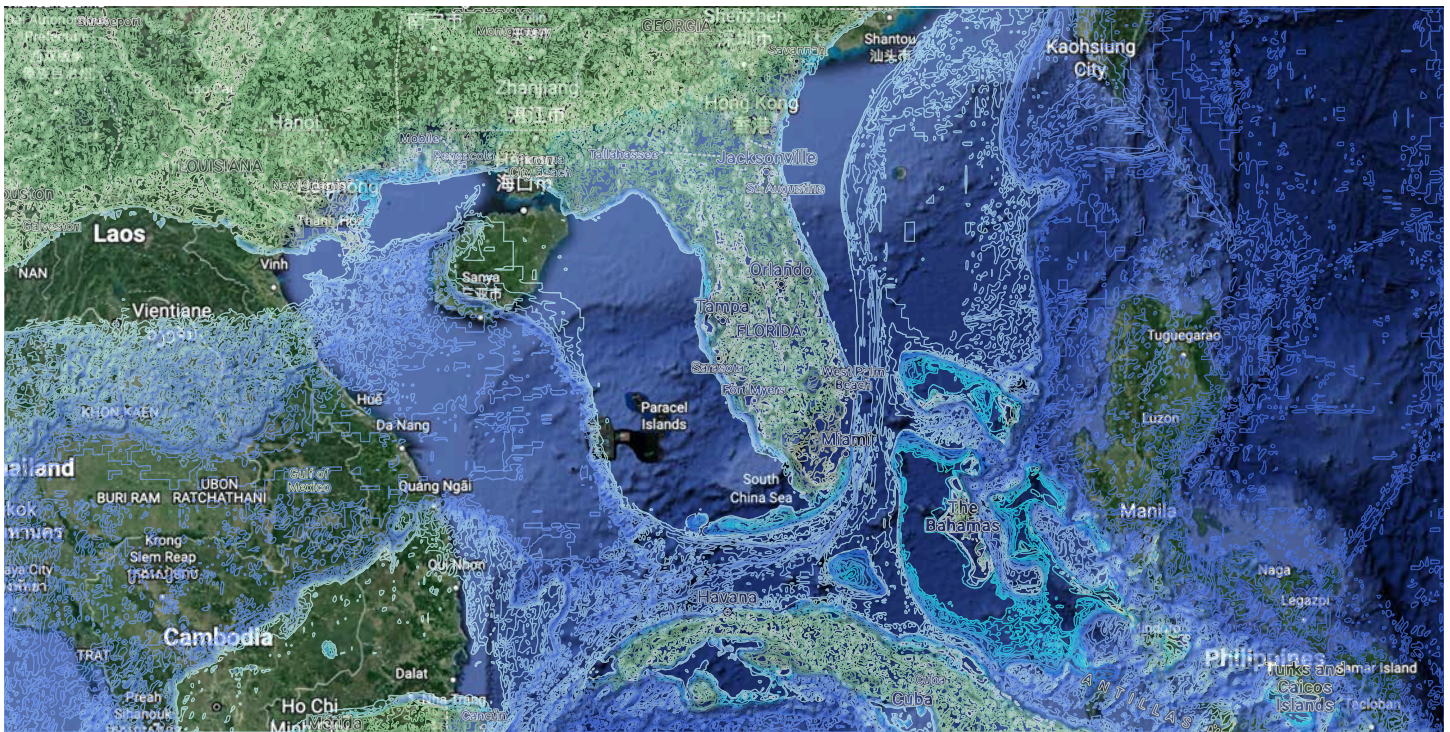


The Power of Geography

IN discussing how Florida's military ranges are vital to current and future DoD missions, one foundational aspect cannot be overlooked: the State's unique geography. The peninsula provides larger test and training ranges that connect land as well as over and undersea areas compared to those in other areas due to the lack of bordering states or countries. Training exercises are also able to incorporate multiple environments, providing valuable experience to service members.

A secondary, although equally crucial, effect of Florida's geography is its resemblance to the South China Sea. As DoD prepares for a potential conflict with the People's Republic of China, the Joint Forces require All-Domain training environments that allow for collaboration across Services as well as capabilities. Florida's ranges provide a similar environment to that of the South China Sea that cannot be found anywhere else in the United States (as represented with the map overlay below). As DoD continues to build capability and capacity for near-peer competition in the future, the value of Florida's geography, combined with its ranges, will play a key role.

As illustrated in the satellite image overlay below, Florida and its surrounding geography provide a close corollary to the A2AD scenario posed by operations in the South China Sea within the first island chain.



Overlay created through open source satellite imagery.

As the United States and its allies bring Joint All-Domain Operations to maturity, the integrated Florida range-of-the-future will take on new significance. Its most important use could well extend beyond the development of new all-domain architectures and employment doctrine, to the campaign-level rehearsal of a full-scale conflict between the United States and its pacing adversary.

Over Land Ranges

Land ranges are dispersed across the state, from the panhandle to South Florida. They provide weapons impact and scoring areas for both test and training, but also the high-fidelity laboratories needed to develop these weapons. Florida's land ranges, with 724 square miles directly adjacent to large swaths of airspace and 17 miles of protected shoreline, are well equipped to meet current Service needs. In fact, they are in such high demand that capacity on Florida's land ranges is often strained to its limits. In the future, it is imperative that Florida's range real estate expands to create more capacity and to provide safe corridors for development of hypersonic and autonomous systems. Major Florida over land ranges include:

Avon Park Air Force Range



Avon Park Air Force Range (APAFR) provides a sustainable, world-class training complex focused on advanced, realistic and relevant training for joint, interagency, and multinational partners, excelling in air-ground integration and Agile Combat Employment. In addition to preparing our Nation's troops, APAFR provides roughly 78,000 acres of land for public use and over 2,500 additional acres set aside for active military, Department of Defense employees, and retired veterans.

Navy Pinecastle Range Complex



The Pinecastle Range Complex is an unfenced 5,760-acre area, with the eastern edge of the range located about 2 miles west of State Road 19 and the Camp Ocala campgrounds, and one-half mile west of the Farles Lake campground. F/A-18 fighters and other aircraft take off from various airports and Air Stations, fly low over the Forest, and drop their bombs in the middle 450 acres of the range. The Navy's Pinecastle Impact Range in the Ocala National Forest is the only place on the East Coast where

the Navy can do live impact training. The Navy drops nearly 20,000 bombs a year at the site, a few hundred of which are live. The Navy has used nearly 6,000 acres of the 382,000-acre forest for target practice for 70 years under a special use permit from the US Forest Service.

Camp Blanding Joint Training Center



Camp Blanding Joint Training Center (CBJTC), located near Starke, Florida, is a 73,000-acre premier training center for Florida National Guard units. The training center provides training areas, ranges, education facilities, simulation platforms, maintenance, and other services to Florida's National Guard and numerous federal, state and local customers spanning the Joint, Interagency, Intergovernmental and Multinational (JIIM) spectrum. Additionally, Camp

Blanding's value as a critical strategic asset for the training and mobilization of units has been repeatedly validated with continued federal homeland and overseas contingency operations.

Air and Space Ranges

Along the panhandle and both coasts of the peninsula, Florida boasts some of the largest dedicated range airspace available anywhere across the globe. The Eglin Water Test/Training Areas, when fully activated and isolated from commercial air traffic, encompass 180,000 square miles of over-water airspace, enabling large force events, and long-range weapons development with engagements of several hundreds of miles. Furthermore, Florida is home to the Space Coast, the only orbital access along the United States eastern seaboard and a key element of the integrated, all-domain range of the future. Major Florida air and space ranges include:

Eastern Range Complex



The Eastern Range extends more than 10,000 miles from the Florida mainland through the South Atlantic and into the Indian Ocean. It includes the launch facilities at Cape Canaveral Space Force Station and a network of instrumentation stations, including Malabar and Jonathan Dickinson tracking annexes, and downrange sites. Space Launch Delta 45 and the Eastern Range assets continue to provide a vast network of radar, telemetry, and communications instrumentation support to facilitate the safe launch of all Department of

Defense National Security Space, National Aeronautics Space Administration, National Oceanic and Atmospheric Administration, commercial and Naval Ordnance Test Unit's support to the Navy's Strategic Systems Programs missions.

Eglin Gulf Test and Training Range



EGTTR is the test and evaluation center for Air Force air-delivered weapons, navigation and guidance systems, Command and Control systems, and Air Force Special Operations Command systems. Testing and training activities in the EGTTR include air-to-air actions, air-to-surface actions, surface-to-air actions, vessel operations, and other/subsurface operations. The EGTTR's battlespace is over 56,000 square miles, and threat replication systems such as the QF-16 from the 82d

Aerial Target Squadron and electronic warfare capabilities fielded by the 53d Test Support Squadron allow C2 agencies to exercise tactics, techniques, and procedures rarely integrated in other large force events.

Jacksonville Range Complex



The JAX Range Complex geographically encompasses offshore, nearshore, and onshore OPAREAs, ranges, and special use airspace (SUA). Components of the JAX Range Complex encompass 50,090 square nautical miles (nm²) of sea space and 62,596 nm² of SUA off the coasts of North Carolina, South Carolina, Georgia, and Florida, as well as 20 square miles of inland range area in north-central Florida. This complex consists of targets and instrumented areas, airspace, surface OPAREAs, and inland range facilities.

Surface and Subsurface Ranges

Florida's large open-water operating areas include the surface and undersea environments. They are critical enablers for many Navy and Marine Corps missions, including surface warfare, mine warfare, and explosive ordinance disposal training. Whether executing sea trials of a new vessel, developing TTPs, or conducting fleet exercises, the maritime services rely on Florida's ranges to meet their test and training needs, even as they look ahead to integrated operations across domains. Major Florida surface and subsurface ranges include:

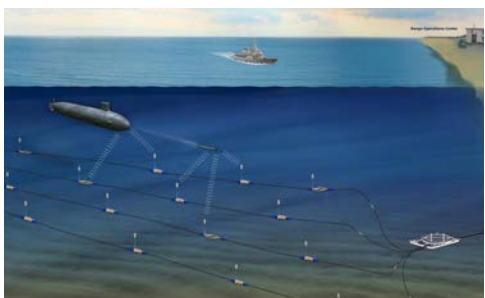
Underwater Sound Reference Division at Bugg Spring



The Underwater Sound Reference Division (USRD) of the Naval Undersea Warfare Center (NUWC) Division Newport maintains an open water facility at Bugg Spring in Okahumpka, Florida. This is a prime facility for calibration of submarine and surface ship tactical towed arrays, and is among the quietest Navy open water facilities. Bugg Spring has an ambient noise level below sea state zero and has no recreational boating noise. Dense vegetation surrounding the spring and its somewhat

isolated location in a rural area contribute to the low noise levels in the spring. Low reverberation allows measurements down to 5 Hz. There is minimum aquatic life interference. It is the only facility of its kind with year round warm weather.

Jacksonville Shallow-Water Training Range



The USWTR will be the first underwater training range, designed and built for use by Air, Surface, and Undersea participants in the shallow-water area that is the most difficult and real-world simulation ASW environment. The USWTR, scheduled to be fully operational by 2023 will provide a center of shallow-water ASW training opportunities in the Jacksonville area of operations. The East Coast USWTR will consist of up to 300 underwater acoustic devices, called nodes; more than 600 nautical miles

of node cable; two junction boxes; shore-based display, processing, and control subsystems with three sea installation periods. The USWTR instrumentation is a system of nodes that transmit and receive signals, connected by cable to each other and end in the Cable Termination Facility (CTF), where the performance of participants in shallow water anti-submarine warfare (ASW) training exercises will be evaluated remotely. It will support ASW training for the Navy Fleet and international partners.

Panama City Operations Area



Naval Support Activity Panama City's professional military and civilian personnel deliver an integrated suite of efficient, effective and responsive shore capabilities to enable and sustain the readiness of tenant activities.

Surface and Subsurface Ranges

South Florida Ocean Measurement Facility



The main mission of SFOMF is to perform electromagnetic signature tests of Navy assets by providing the ability to monitor surface ship, submarine, and remote vehicle signatures in the near shore environment. The facility has multiple unique capabilities that amplify its value to DoD; multiple fixed, in-water electromagnetic and acoustic measurement sites at various depths are controlled from a secure range house. The range encompasses the Navy's only shallow and deep water

electromagnetic research and development ranges, and accommodates both surface and submerged operations.

Atlantic Targets and Marine Operations Key West



The NAWCAD ATMO Key West Detachment supports various tests, devices, and concepts in the real-world environment. The Detachment operates and maintains a 192-foot research vessel, a 180-foot Training Support Vessel, a 100-foot Research Vessel, and various other smaller boats. The facility provides the necessary capabilities for day-to-day operations and vessel support requirements. However, on occasion they are required to conduct worldwide, extensive, long-range, and complex at-sea exercises.

Cyber Ranges

While often overlooked as part of the MRTFB, cyber ranges are critical force-multipliers. They are less physically tangible than ranges in the other domains, but in many ways constitute the most important enabler for development of the future JADC2 architecture. Their growth and integration with Florida's other ranges will be the linchpin to future multi-domain test and training. Cyber capabilities provide some of the most synergistic advantages when coupled with effectors in other domains. Cyber ranges enable military users to test and train with the latest systems, whether in an offensive or defensive role.

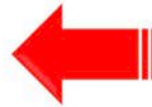
Traditional Open Air Ranges

- Physical Environment
 - Weapon Testing
 - Mission Rehearsal
 - TTP Development



Cyber Ranges

- Virtual Environment
 - Cyber Capabilities Testing
 - Mission Rehearsal
 - TTP Development



Source: [DoD National Cyber Range Complex Overview](#) (November 2018)

National Cyber Range Complex



The NCR's skilled workforce operates a secure, closed-loop system based on innovative technologies developed under DARPA and exercised by the Department of Defense (DoD) Test Resource Management Center (TRMC) in support of DoD acquisition programs and the Cyber Mission Force (CMF). The NCR team provides an array of services including the design and implementation of tailored, operationally realistic cyberspace environments, customized instrumentation, threat portrayal, and data analysis in support of the complete spectrum of requirements in the domains of cyber T&E, training, and mission rehearsal. NCR acquisition program event objectives have focused in areas such as science and technology experimentation, architectural evaluations, security control assessments, cooperative vulnerability and penetration assessments, adversarial assessments. NCR events in the support of CMF requirements have informed refinements to tactics, techniques, and procedures.

Key Partners Across the State

Academia

AS DoD missions call for increased innovation, the Department's partners across academia play a crucial role in technology development and testing. Florida schools provide new talent and state of the art facilities that help DoD tackle complex challenges spanning multiple mission sets. Some of these programs include:

- **Florida International University's Applied Research Center:** [Cyberspace research](#) to develop new technology to help thwart cyberattacks and cyberterrorism.
- **Florida Atlantic University's Department of Mathematical Sciences:** Investigate efficient hardware and [software implementations](#) as well as side-channel investigations of post-quantum cryptographic families and their applications to public key applications such as encryption, digital signature, and key encapsulation mechanisms.
- **University of South Florida College of Engineering and Department of Sociology:** Examine how fast and in what ways different kinds of [information](#) travel through online environments, including social media.
- **University of Central Florida's College of Engineering and Computer Science:** [Projects](#) that range from advancing hypersonic propulsion to improving semiconductor performance.
- **Florida Agricultural and Mechanical University's College of Engineering:** Partnership with DoD to study [3D printed composites](#) that could be used to protect military troops from explosions.
- **University of West Florida's Center for Cybersecurity:** Among 84 other universities across the country that [support CYBERCOM](#) efforts in areas such as future workforce, applied cyber research, applied analytics and other strategic issues.



Industry

As with the State's academic partners, Florida's concentration of defense and technology industry partners provides direct value to DoD ranges and missions. Leaders in military aircraft manufacturing, space craft design, and launch technology development have made Florida a major hub of their operations. The proximity to mission owners, as well as leading talent, creates an environment driving innovation and commitment to advancing U.S. national security. Some of the leading programs in Florida's defense industry include:

- **SpaceX:** Two [launch complexes](#) in Cape Canaveral provide access to a wide range of low and medium inclination orbits frequently used by communications and Earth-observing satellites and by supply missions to the International Space Station. The site also allows access to geostationary orbits, as well as departures to the Moon and interplanetary destinations.
- **L3Harris:** The [8th largest business](#) in the state, L3Harris plays key roles on major NASA space programs; provides mission-critical radio systems for the U.S. Central Command, U.S. Special Operations Command; designs and manufactures military grade multi-function laser systems; develops payloads for commercial and government satellite constellations; and offers technology and training solutions for a new era of aviation.
- **OneWeb:** Together with Airbus, opened a [production facility](#) in Florida to offer "high-volume, high-speed" fabrication of satellites to provide internet connections.
- **Lockheed Martin:** With two [innovation facilities](#) in Orlando - Missiles and Fire Control and Rotary Mission Systems - Lockheed provides support for all military services as well as dozens of allies.
- **Leonardo DRS:** Leonardo's [Melbourne facility](#) provides Mounted & Aviation EO/IR Systems Design, Engineering and Production, Rugged System Design, Manpack / SIGINT / SCIF, System Integration Lab (SIL) and Qualification Test Lab, Environmental Stress Screening (ESS) and Final Assembly & Test, Life Cycle Service & Support.



Resources

Acronym Reference

Advanced Battle Management System.....	ABMS
Anti-Access/Area Denial.....	A2AD
Anti-Submarine Warfare.....	ASW
Atlantic Targets and Marine Operations.....	ATMO
Autonomous Collaborative Platforms.....	ACPs
Camp Blanding Joint Training Center.....	CBJTC
Command, Control, and Communications.....	C3
Common Range Integrated Instrumentation System.....	CRIIS
Concepts of Employment.....	CONEMP
Concepts of Operation.....	CONOPs
Cyber Mission Force.....	CMF
Defense Advanced Research Projects Agency.....	DARPA
Department of Defense.....	DoD
Eglin Gulf Test and Training Range.....	EGTTR
Electronic Warfare.....	EW
Joint Interagency, Intergovernmental, and Multinational.....	JIIM
Joint All-Domain Operations.....	JADO
Joint All-Domain Command and Control.....	JADC2
Live, Virtual, and Constructive.....	LVC
Military Mission Line.....	MML
National Cyber Range Complex.....	NCRC
Naval Air Warfare Center Aircraft Division.....	NAWCAD
Nevada Test and Training Range.....	NTRR
Nuclear Command, Control, and Communication.....	NC3
Naval Undersea Warfare Center.....	NUWC
Operational Test and Evaluation.....	OT&E
Research, Development, Test, and Evaluation.....	RDT&E
South Florida Ocean Measurement Facility.....	SFOMF
Special Use Airspace.....	SUA
Tactics, Techniques, and Procedures.....	TTPs
Test Resource Management Center.....	TRMC
Test Wing.....	TW
Undersea Warfare Training Range.....	USWTR
Underwater Sound Reference Division.....	USRD
U.S. Air Force.....	USAF
U.S. Navy.....	USN

Major DoD Equities Across Florida



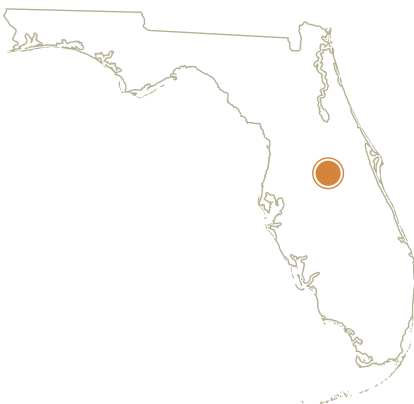
AFRL Munitions Directorate (AFRL RW)

- **Location:** Eglin Air Force Base (Valparaiso)
- **Service(s):**



Mission and Value

AFRL RW rapidly develops and delivers war-winning munitions technologies to enable the multi-domain effects our Air and Space forces need to address the pacing threat. These technologies are allowing weapons to survive and thrive in highly-contested, multi-domain environments, making them more connected, more affordable, more capable and with greater load-out capacity.



Air Force Agency for Modeling and Simulation

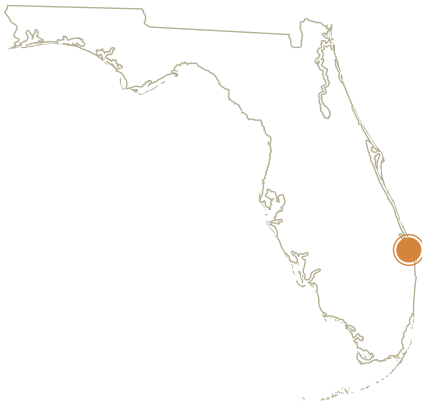
- **Location:** Orlando
- **Service(s):**



Mission and Value

AFAMS champions enterprise multi-domain Modeling and Simulation concepts, develops capability-based requirements, conducts studies and analysis, fosters collaboration, and drives modernization to advance Airmen preparedness and lethality. The Agency is also part of Team Orlando, a partnership among the military services, industry, and academia working to leverage resources and contribute to the overall security of the United States.

Major DoD Equities Across Florida



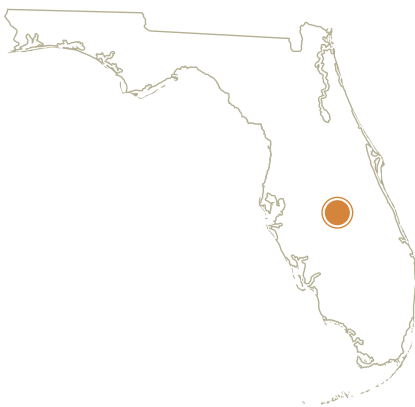
The Atlantic Underwater Test and Evaluation Center (AUTEK, NUWC Newport Division)

- **Location:** West Palm Beach
- **Service(s):**



Mission and Value

AUTEK provides instrumented operational areas in a real world environment to satisfy research, development, test and evaluation requirements and operational performance assessment of war fighter readiness in support of the full spectrum of maritime warfare. AUTEK's capabilities include the Weapons Range, the Acoustic Range, and the FORACS Range - all located in the Tongue of the ocean (TOTO), a deep-ocean basin approximately 100 nautical miles (190 km) long by 15 nautical miles (28 km) wide, with depths as great as 6,000 feet (1,800 m).



Avon Park Air Force Range

- **Location:** Avon Park
- **Service(s):**



Mission and Value

Provide a sustainable, world-class training complex focused on advanced, realistic and relevant training for joint, interagency, and multinational partners, excelling in air-ground integration and Agile Combat Employment. In addition to preparing our Nation's troops, APAFR provides roughly 78,000 acres of land for public use and over 2,500 additional acres set aside for active military, Department of Defense employees, and retired veterans. The Fish, Wildlife and Outdoor Recreation program in cooperation with other programs on range manages wildlife and habitats using sound scientific practices including species surveys, game size and bag limits, rotational prescribed burning, cattle leases, and timber management.

Major DoD Equities Across Florida



Blount Island Command

- **Location:** Jacksonville
- **Service(s):**



Mission and Value

As the hub of the Marine Corps' prepositioning programs, Marine Corps Support Facility Blount Island serves as the home of Blount Island Command and its worldwide mission supporting Fleet Marine Forces. Blount Island Command's Marines, sailors, civilians, and defense contractor partners are proud of our relationship with Marine warfighters and are singularly dedicated to providing them with the best combat-ready equipment and supplies in the world. BICmd works closely with the supported expeditionary force commander to exceed ISO 9001 goals of 98% attainment, 98% readiness, and 98% data accuracy of the prepositioned combat capability sets. BICmd's focus will always be on the combat readiness, visibility, and attainment of prepositioned equipment and supplies.



Camp Blanding Joint Training Center (CBJTC)

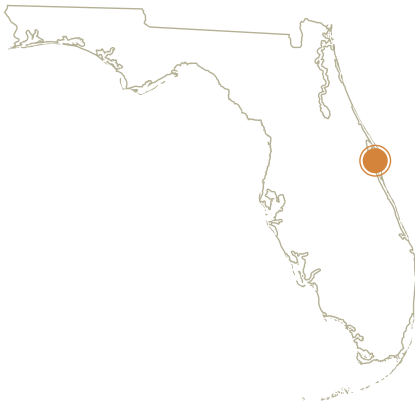
- **Location:** Starke
- **Service(s):**



Mission and Value

Camp Blanding Joint Training Center (CBJTC) is a 73,000-acre premier training center for Florida National Guard units. The training center provides training areas, ranges, education facilities, simulation platforms, maintenance, and other services to Florida's National Guard and numerous federal, state and local customers spanning the Joint, Interagency, Intergovernmental and Multinational (JIIM) spectrum. Camp Blanding has proven to be a valuable asset to Florida's state agencies, as it serves as a Continuity of Government site for the Governor and his Executive Branch, and a Continuity of Operations site for the Florida Division of Emergency Management (FDEM) and Joint Forces Headquarters-Florida. Camp Blanding also serves as a Joint Reception, Staging, and Onward Integration site, and a Logistical Support Base during emergency operations as part of Florida National Guard's support to civil authorities.

Major DoD Equities Across Florida



Cape Canaveral Space Force Station

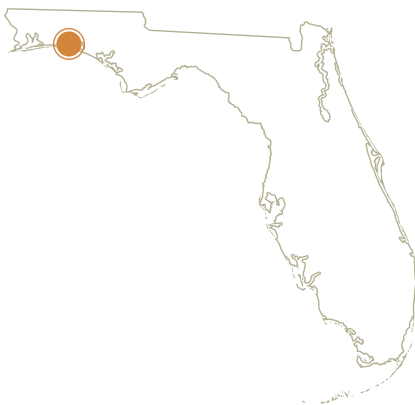
- **Location:** Cape Canaveral
- **Service(s):**



Mission and Value

Cape Canaveral Space Force Station (CCSFS) is an installation of the United States Space Force's

Space Launch Delta 45, located on Cape Canaveral in Brevard County, Florida. Headquartered at the nearby Patrick Space Force Base, the station is the primary launch site for the Space Force's Eastern Range with three launch pads currently active (Space Launch Complexes 37B, 40, and 41). The facility is south-southeast of NASA's Kennedy Space Center on adjacent Merritt Island, with the two linked by bridges and causeways. The Cape Canaveral Space Force Station Skid Strip provides a 10,000-foot (3,000 m) runway close to the launch complexes for military airlift aircraft delivering heavy and outsized payloads to the Cape.



Eglin Air Force Base

- **Location:** Valparaiso
- **Service(s):**



Mission and Value

The 96th Test Wing executes developmental test and evaluation enabling the warfighter to put weapons on target in all battlespace media while also providing support for all other Team Eglin missions as the installation host wing. Eglin is also home to the OT&E activities of the 53rd Wing, the 350th Spectrum Warfare Wing, and the 33rd Fighter Wing which conducts F-35A training. Eglin deploys combat ready forces while delivering full spectrum support to the DoD's second largest test and training complex.

Major DoD Equities Across Florida



Homestead Air Reserve Base

- **Location:** Miami
- **Service(s):**



Mission and Value

The 482nd Fighter Wing, the host unit of Homestead ARB, continues to support contingency and training operations of U.S. Southern Command and a number of tenant

units, including Headquarters Special Operations Command South, the U.S. Coast Guard Maritime Safety and Security Team, and an air and maritime unit of U.S. Customs and Border Protection. In addition, Homestead ARB is home to the most active NORAD alert site in the continental United States, operated by a detachment of F-15 fighter interceptors from the 125th FW of the Florida Air National Guard. The 482nd FW also supports and trains civil engineering, communications, medical, logistics, aircraft maintenance, mission support, aerial transportation specialists and a security forces squadron that can be deployed interchangeably with active-duty units to meet U.S. Air Force commitments around the world.



Hurlburt Field

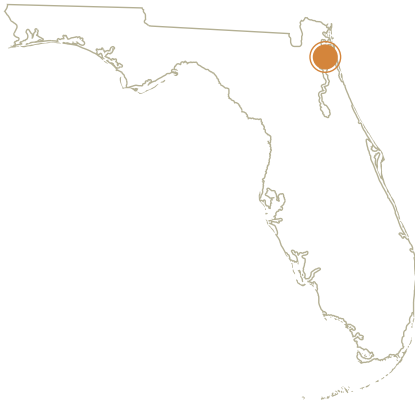
- **Location:** Mary Esther
- **Service(s):**



Mission and Value

Home of the Air Commandos since 1961, Hurlburt Field today accommodates the 1st Special Operations Wing (1 SOW), Headquarters Air Force Special Operations Command (AFSOC), an Air Force major command, and a number of associate units. Hurlburt is also home to the 492nd Special Operations Wing.

Major DoD Equities Across Florida



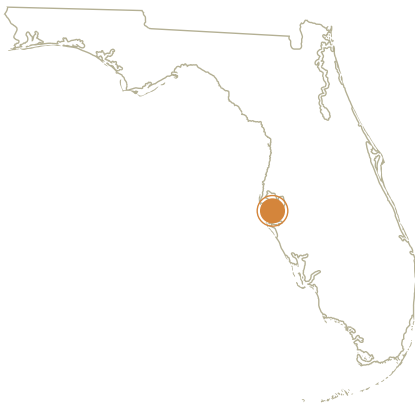
Jacksonville Air National Guard Base

- **Location:** Jacksonville
- **Service(s):**



Mission and Value

At the Jacksonville base, the primary mission is the Fighter mission with the 125th Fighter Wing, which involves air-to-air and air-to-ground operations designed to support ground forces and to gain control of enemy airspace. Additional missions include Explosive Ordnance Disposal and Homeland Defense. The 125 FW provides fully trained wing personnel and combat ready F-15 Air Superiority fighters to the United States Air Force for contingency operations worldwide. It also provides fully trained and qualified personnel in time of war or national emergency for the defense of the North American continent, as well as, emergency relief and counter-drug enforcement to those, both stateside and overseas, affected by devastating natural disasters.



MacDill Air Force Base

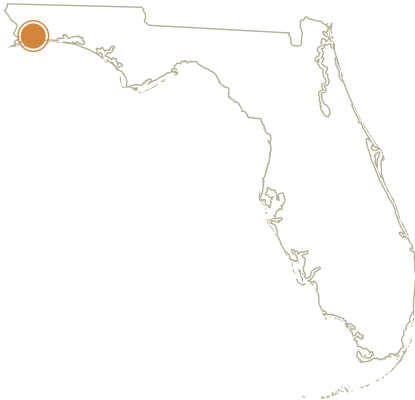
- **Location:** Tampa
- **Service(s):**



Mission and Value

MacDill AFB is an Air Mobility Command base capable of rapidly projecting air-refueling power anywhere in the world. Organized into four groups to carry out a two-fold mission of air refueling and airlift support to the two Unified Commands based at MacDill. MacDill is home to the 6th Air Refueling Wing, United States Central Command and United States Special Operations Command, U.S. Marine Corps Forces Central Command (MARCENT), Joint Communication Support Element, and U.S. Special Operations Command Central (SOCCENT).

Major DoD Equities Across Florida



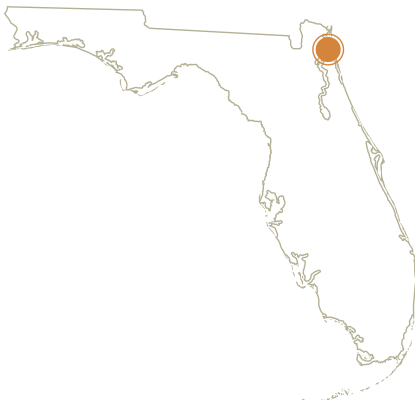
Naval Air Station Pensacola - Corry Station

- **Location:** Pensacola
- **Service(s):**



Mission and Value

The mission of Training Center Corry is to support the Department of Defense, with which it works in a tight collaboration. The installation hosts multiple schools and training centers. They are used by the Department of Defense to train various types of troops, as well as reserve troops and civilians. The center is among the few installations that are open to civilians, but under strict and specific rules and regulations. Other than that, its students come from all over the world and not just the allied countries of the United States of America. Besides, the base has five different detachments in four states – Maryland, Texas, California and Arizona.



Naval Air Station Jacksonville

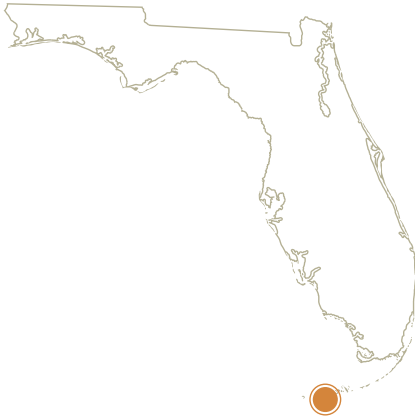
- **Location:** Jacksonville
- **Service(s):**



Mission and Value

Naval Air Station Jacksonville is one of the Navy's finest and fastest growing installations and is the recipient of the 2012 Presidential Excellence Award and 2013 Commander, Navy Installations Command Excellence Award. The installation is host to Naval Facilities Engineering Command Southeast, the Center for Naval Aviation Technical Training Center Jax, and Fleet Readiness Center Southeast, amongst others. We are the largest Navy base in the Southeast Region and third in the nation. As a master air and industrial base, Naval Air Station Jacksonville supports U.S. and allied forces specializing in anti-submarine warfare and training of the best aviators in the world for manned and unmanned platforms.

Major DoD Equities Across Florida



Naval Air Station Key West

- **Location:** Key West
- **Service(s):**



Mission and Value

NAS Key West is the U.S. Navy's premier training facility for tactical aviation squadrons. Local aerial ranges enable aviators to engage in training maneuvers within minutes of takeoff. The station is equipped with a sophisticated tactical combat training system, which tracks and records combat aerial maneuvers. As a host facility, NAS Key West provides and maintains facilities and services for tenant commands, and ensures quality of life for all personnel.



Naval Air Station Pensacola

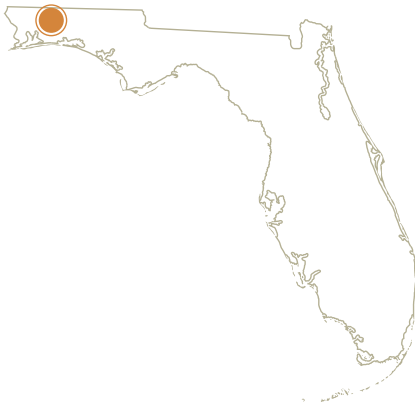
- **Location:** Pensacola
- **Service(s):**



Mission and Value

NAS Pensacola is dedicated to providing the highest level of base operating support and quality of life services for all shore activities aboard NAS Pensacola, Corry Station, Saufley Field, and Bronson Field. Known as the "Cradle of Naval Aviation", Naval Air Station Pensacola serves as the launching point for the flight training of every Naval Aviator, Naval Flight Officer (NFO), and enlisted Naval Aircrewman. In addition, approximately 23,000 aviation personnel in aeronautical technical phases of naval operations are trained here.

Major DoD Equities Across Florida



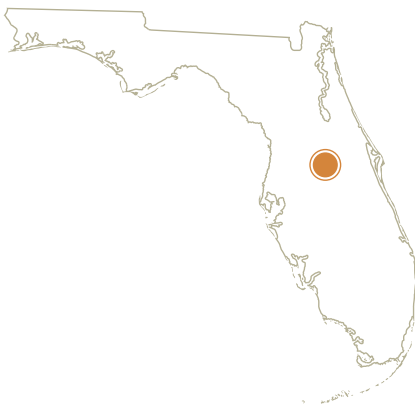
Naval Air Station Whiting Field

- **Location:** Milton
- **Service(s):**



Mission and Value

Naval Air Station Whiting Field is the home of Training Air Wing FIVE, and together we form the backbone of Naval Aviation Training. More than 60 percent of all primary flight training is performed at NAS Whiting Field and every Navy, Marine Corps and Coast Guard helicopter pilot receives their initial rotary winged training here. Roughly 17 percent of all Navy flight hours are flown here annually as well as approximately 12 percent of all Navy and Marine Corps flight hours. With more than 250 aircraft, the two airfields at NAS Whiting Field proper are augmented with 12 other Navy Outlying Landing Fields (NOLFs) to spread out the 120,000 to 160,000 flight hours accumulated here annually. This accounts for approximately one million flight hours each year, more than Atlanta-Hartsfield International Airport - the busiest civilian airport in the United States.



Naval Air Warfare Center Training Systems Division

- **Location:** Orlando
- **Service(s):**



Mission and Value

It is the Center's mission to be the principal Navy center for research, development, test and evaluation, acquisition and product support of training systems, to provide Inter-service coordination and training systems support for the Army, Marine Corps and Air Force, and to perform such other functions and tasks as directed by higher authority. NAWCTSD works on training systems, training content, training services, and intellectual services.

Major DoD Equities Across Florida



Naval Air Warfare Center Aircraft Division Atlantic Targets and Marine Operations (ATMO) Division, Key West Detachment

- **Location:** Key West
- **Service(s):**



Mission and Value

The NAWCAD ATMO Key West detachment supports various tests, devices, and concepts in the real-world environment. The Detachment operates and maintains a 192-foot research vessel, a 180-foot training support vessel, a 100-foot research vessel, and various other smaller boats. The facility provides the necessary capabilities for day-to-day operations and vessel support requirements. However, on occasion they are required to conduct worldwide, extensive, long-range, and complex at-sea exercises.



Naval Research Lab

- **Location:** Key West
- **Service(s):**



Mission and Value

The Naval Research Lab component based in Key West hosts the division's Marine Corrosion Facility. This facility addresses problems in corrosion and marine fouling. The laboratory resides in an unparalleled site for natural seawater exposure testing and marine related materials evaluation.

Major DoD Equities Across Florida



Naval Support Activity Panama City

- **Location:** Panama City
- **Service(s):**



Mission and Value

NSA Panama City exists to enable warfighter readiness. The installation's largest tenant command is Naval Surface Warfare Center Panama City (NSWC PCD) Division which is one of the major research, development, test and evaluation laboratories in the Navy. NSWC PCD boasts expertise in engineering and scientific disciplines in the areas of mine warfare, expeditionary warfare, special warfare and diving and life support. NSWC and three other tenant commands: Navy Experimental Diving Unit, Naval Diving and Salvage Training Center and Center for Navy Ordnance Disposal and Diving, together make the installation a consolidated site for all Navy diving and salvage research, development, testing and training.



Naval Station Mayport

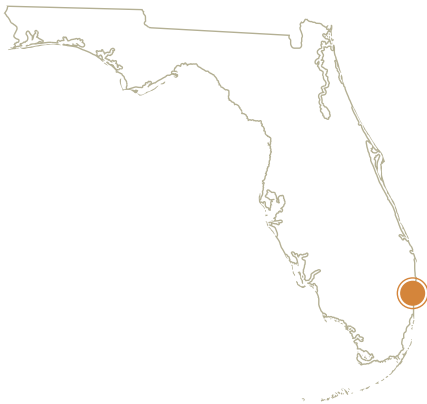
- **Location:** Mayport
- **Service(s):**



Mission and Value

With more than 3,400 acres, NS Mayport is host to more than 80 tenant commands including 22 naval ships and six Light Airborne Multi-purpose System (LAMPS) Mark III helicopter squadrons. Mayport is also home to Helicopter Maritime Strike Wing Atlantic with four MH-60R squadrons. The wing also has three additional active duty MH-60R squadrons at NAS Jacksonville plus an OPCON/ADCON "sharing" arrangement with a fourth Navy Reserve MH-60R squadron there. As a major Surface and Air Warfare organization, Mayport remains dedicated to providing the "Finest Service to the Finest Fleet," as it grows into the 21st century.

Major DoD Equities Across Florida



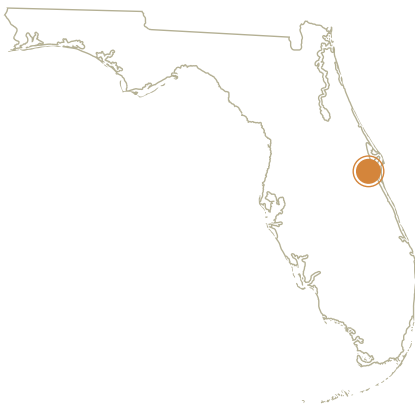
Naval Surface Warfare Center Carderock Division: South Florida Ocean Measurement Facility

- **Location:** Fort Lauderdale
- **Service(s):**



Mission and Value

The main mission of SFOMF is to perform electromagnetic signature tests of Navy assets by providing the ability to monitor surface ship, submarine, and remote vehicle signatures in the near shore environment. The facility has multiple unique capabilities that amplify its value to DoD; multiple fixed, in-water electromagnetic and acoustic measurement sites at various depths are controlled from a secure range house. The range encompasses the Navy's only shallow and deep water electromagnetic research and development ranges, and accommodates both surface and submerged operations.



Naval Surface Warfare Center Carderock Division: Acoustics Trials Detachment

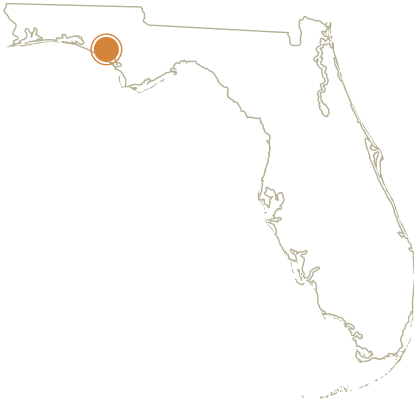
- **Location:** Titusville
- **Service(s):**



Mission and Value

This detachment is the Depot Level Maintenance Facility which provides management and logistic support for East Coast full-scale ship and submarine acoustic trials. It is responsible for the operation of the South "Tongue of the Ocean" (TOTO) Acoustic Measurement Facility (STAFAC) in the Bahamas. Located at (AUTECH) in Andros, Bahamas, the STAFAC facility provides an ideal ship acoustic measurement site characterized by low ambient noise and minimal noise interference. The facility consists of a remote site of sensors to collect acoustic signatures of submerged submarines or surface ships while underway for a variety of speeds and operating conditions as the submarine transits back and forth between the dual bottom-mounted acoustic arrays. The signal processing and in-water hardware were designed to easily accommodate a variety of sponsors and requirements.

Major DoD Equities Across Florida



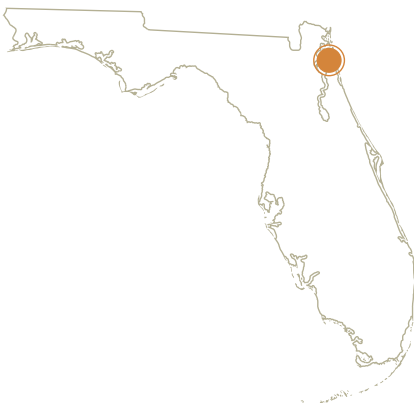
Naval Surface Warfare Center Panama City

- **Location:** Panama City
- **Service(s):**



Mission and Value

NSWC Panama City's mission is to conduct research, development, test and evaluation (RDT&E) and in-service support of the following core mission areas: Mine Warfare Systems, Naval Special Warfare Systems, Diving and Life Support Systems, Amphibious/Expeditionary Maneuver Warfare Systems, and other missions that occur in the littoral, or coastal regions.



Naval Underwater Warfare Center Newport Division: Shipboard Electronics Systems Evaluation Facility

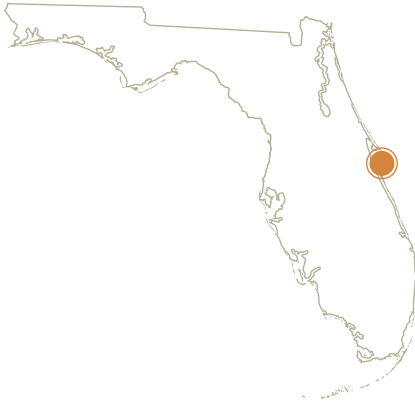
- **Location:** Mayport
- **Service(s):**



Mission and Value

The mission of NUWC SESEF is to provide electromagnetic systems test and evaluation services to afloat and shore commands: for the development of new and upgraded systems; to validate system performance following new construction and overhaul; and to provide real-time assessment of material readiness in an operational environment.

Major DoD Equities Across Florida



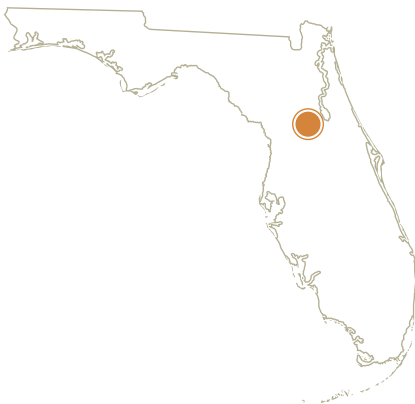
Patrick Space Force Base

- **Location:** Cocoa Beach
- **Service(s):**



Mission and Value

Space Launch Delta 45, co-located at Patrick SFB and Cape Canaveral SFS, provides activities and resources for safety of flight, range instrumentation, infrastructure, and scheduling required to support and assure space and ballistic launches, and other operations. The delta manages space launch operations from the Eastern Range for the United States Space Force. Patrick SFB is also home to the Air Force Technical Application Center (AFTAC), and Defense Equal Opportunity Management Institute (DEOMI).



Pinecastle Impact Range

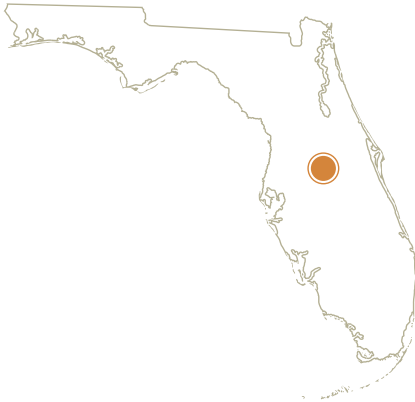
- **Location:** Altoona
- **Service(s):**



Mission and Value

The Navy's Pinecastle Impact Range in the Ocala National Forest is the only place on the East Coast where the Navy can do live impact training. The Navy drops nearly 20,000 bombs a year at the site, a few hundred of which are live. The Navy has used nearly 6,000 acres of the 382,000-acre forest for target practice for 50 years under a special use permit from the US Forest Service. Pinecastle includes 9 Bombing Ranges: Live Ordnance Impact Area, Main Bull (Special Weapons Bombing Target), Day/Night Conventional Dive Bomb/Rocket Target, Surface-to-Air Missile (SAM) Site Target, Strafing Target, Inert Ordnance Runway, Red Box Target, Mini-Convoy, and a Laser Target range.

Major DoD Equities Across Florida



Program Executive Office for Simulation, Training, and Instrumentation

- **Location:** Orlando
- **Service(s):**



Mission and Value

PEOSTRI's mission is to rapidly develop, deliver and sustain testing, training and information operations capabilities to enhance readiness across the operational spectrum. Specific focus areas include synthetic environments; soldier training; cyber, test, and training; training aids, devices, and simulators; simulation; and support operations.



Program Manager for Training Systems

- **Location:** Orlando
- **Service(s):**



Mission and Value

The Program Manager for Training Systems (PM TRASYS), located in Orlando, Florida, improves the warfighting effectiveness of the Marine Air-Ground Task Force and globally deployed maritime expeditionary forces by providing training support and developing and sustaining training systems and devices. They are the training systems acquisition arm for the Marine Corps. The various training products they provide include simulators, mock weapons, range targets and range instrumentation. PM TRASYS also provides training technology research and development, distributed learning capabilities, training observation capabilities, after-action review systems, training personnel and combat environment role players.

Major DoD Equities Across Florida



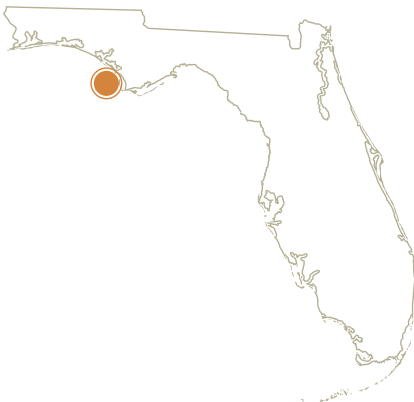
Saufley Field (Naval Education and Training Professional Development Center)

- **Location:** Pensacola
- **Service(s):**



Mission and Value

Saufley Field's current mission is to support training and to serve as home for several DoD and other U.S. Government organizations as a joint use facility. Base tenants include the Defense Activity for Non-Traditional Education Support, Defense Finance and Accounting Service Financial Systems Activity, Naval Reserve Center Pensacola, and Bureau of Prisons. Saufley Field currently has four inactive runways.



Tyndall Air Force Base

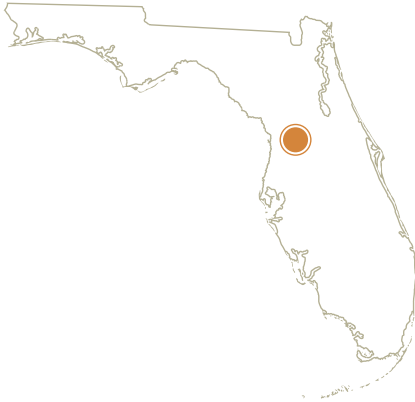
- **Location:** Panama City
- **Service(s):**



Mission and Value

Tyndall Air Force Base is a United States Air Force Base located 12 miles east of Panama City, Florida. The base operating unit and host wing is the 325th Fighter Wing of the Air Combat Command. Tyndall AFB will be welcoming more than 70 F-35s; and along with them, hundreds of airmen and their families, the first of which are to arrive in September 2023. Four years after Tyndall AFB was slammed by Hurricane Michael, leaders there are working not just to rebuild that base, but to create a "base of the future" with a focus on resiliency, sustainability, and smart technology that can serve as a model for the entire Department of Defense.

Major DoD Equities Across Florida



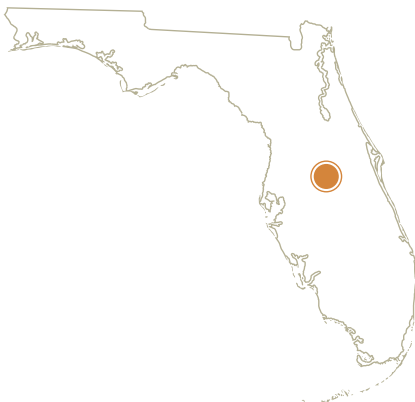
Underwater Sound Reference Division (USRD) of NUWC at Bugg Spring

- **Location:** Bugg Spring
- **Service(s):**



Mission and Value

The Underwater Sound Reference Division (USRD) of the Naval Undersea Warfare Center (NUWC) Division Newport maintains an open water facility at Bugg Spring in Okahumpka, Florida (approximately 8 kilometers southwest of Leesburg). This is a prime facility for calibration of submarine and surface ship tactical towed arrays, and is among the quietest Navy open water facilities. Bugg Spring has an ambient noise level below sea state zero and has no recreational boating noise. Dense vegetation surrounding the spring and its somewhat isolated location in a rural area contribute to the low noise levels in the spring. Low reverberation allows measurements down to 5 Hz. There is minimum aquatic life interference. It is the only facility of its kind with year round warm weather.



University of Central Florida's Army Research Laboratory Human Research and Engineering Directorate

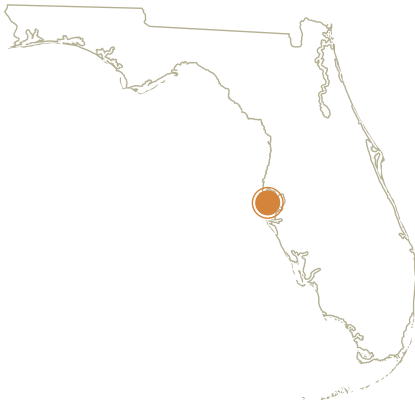
- **Location:** Orlando
- **Service(s):**



Mission and Value

UCF's Army Research Laboratory for Human Research and Engineering provides a collaborative laboratory environment for engineers and scientists from the Soldier Center, UCF and other partnering organizations working on technology to enhance technical knowledge of the basic and applied research areas. Finally, this collective effort will help to identify emerging simulation technologies and applications that will efficiently and cost-effectively support the Army.

Major DoD Equities Across Florida



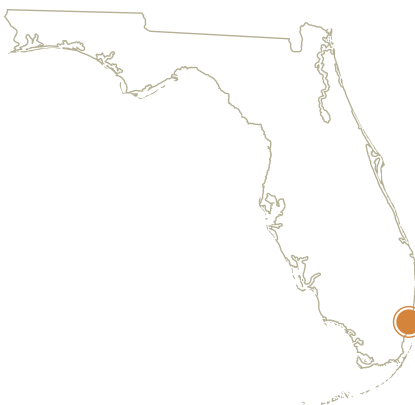
United States Central Command

- **Location:** Tampa
- **Service(s):**



Mission and Value

USCENTCOM directs and enables military operations and activities with allies and partners to increase regional security and stability in support of enduring U.S. interests. Headquartered out of MacDill Air Force Base in Tampa, USCENTCOM's priorities include deterring Iran, maintaining defeat-ISIS campaigns in Syria and Iraq, countering the UAS threat, weaponization of internally displaced persons (IDPs) and refugees.



United States Southern Command

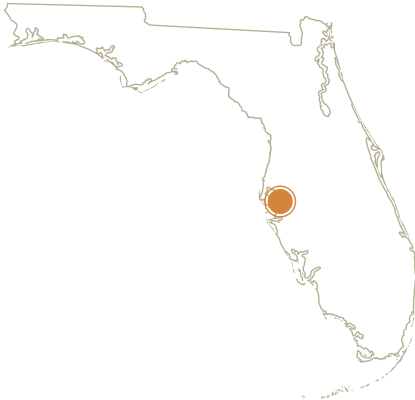
- **Location:** Doral
- **Service(s):**



Mission and Value

United States SOUTHCOM deters aggression, defeats threats, rapidly responds to crises, and builds regional capacity, working with allies, partner nations, and U.S. government team members to enhance security, defend the homeland, and protect national interests.

Major DoD Equities Across Florida



United States Special Operations Command

- **Location:** Tampa
- **Service(s):**



Mission and Value

USSOCOM is headquartered at MacDill Air Force Base alongside USCENTCOM. USSOCOM develops and employs fully capable Special Operations Forces to conduct global special operations and activities as part of the Joint Force to support persistent, networked and distributed Combatant Command operations and campaigns against state and non-state actors to protect and advance U.S. policies and objectives.