

MODELING, SIMULATION AND TRAINING WHY ORLANDO?

- **More than 100 MS&T Companies** — Provide partnering and leveraging opportunities for new business ventures.
- **Features Gross Regional Product of \$3 billion** — A deep cluster with large, medium and small companies supported by professional services.
- **Training System Procurement Commands for the U.S. Military** — Team Orlando annually accounts for more than \$5 billion in Department of Defense contract awards.
- **University of Central Florida, 56,000 strong** — Emphasis on engineering; one of only three places in the world to offer Ph.D. for MS&T, making it easy to build a scalable workforce; R&D collaboration and matching funds for research dollars.
- **Embry Riddle Aeronautical University** — One of the country's top aviation and aerospace schools, offering prominent flight simulation and air traffic control simulation programs to provide a trained and ready workforce.
- **Military and Entertainment Technology** — Access to story-tellers and commercial game development expertise to improve competitiveness and products.
- **National Center for Simulation** — Industry trade association to assist with interface to military and other companies in sector.
- **Lockheed Martin, SAIC, Northrop Grumman, General Dynamics, Saab, L-3 Communications, Rockwell Collins, CAE, Silicon Graphics, Indra Systems, JHT, Wyle, DiSTI and YOUR COMPANY?**

"Orlando and Central Florida are the epicenter for modeling and simulation. When you combine the power of the Research Park, close ties between a world class university, industry and Team Orlando you produce a synergy found nowhere else in the world. Companies who want to be serious players in the modeling and simulation industry need to consider focusing their efforts on Orlando and Central Florida."

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President/Executive Director, National Center for Simulation

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Metro Orlando has long been established as the nation's epicenter for modeling, simulation and training (MS&T) technology. The MS&T sector in Metro Orlando features:

- 100+ companies
- 12,500+ workers
- Gross regional product of more than \$3 billion

As the largest MS&T cluster in the country, it evolved over the past 40 years from its roots in military training to provide applications in such diverse fields as:

- Aviation and aerospace
- Education
- Emergency services
- Entertainment
- Homeland security
- Information technologies
- Medical technologies
- Microelectronics
- Optics and photonics
- Transportation

Backing the MS&T industry in Metro Orlando are a number of renowned research, support and educational facilities, such as:

- [National Center for Simulation](#)
- [University of Central Florida's Institute for Simulation and Training](#)
- [Embry Riddle Aeronautical University's aviation simulation programs](#)

Metro Orlando's strong MS&T standing has earned the region the distinction of being designated the National Center of Excellence in Simulation and Training. The extensive resources and expertise available in Metro Orlando, through the convergence of prominent MS&T organizations, reinforce the region's position as an unmatched locale for new and expanding companies within the industry.

Overview and History

The modeling, simulation and training (MS&T) industry in Metro Orlando was launched in the mid-1960s when the Naval Training Systems Center relocated to the region from Long Island, NY. Since that time, the industry in Metro Orlando has grown to include 100+ companies, which specialize in a variety of applications from entertainment to emergency preparedness to transportation planning.

This region is home to the [Naval Air Warfare Center Training Systems Division \(NAWC TSD\)](#), the [Army's Program Executive Office for Simulation, Training, and Instrumentation \(PEO STRI\)](#), which together form the core of the "Team Orlando" MS&T sector in Metro Orlando. These organizations, along with programs developed by the Marine Corps, Air Force and Coast Guard, represent a significant portion of our military's purchasing and operational support for their simulation and training needs, attracting a great number of associated vendors to the region. As a result, Team Orlando annually accounts for more than \$5 billion in Department of Defense contract awards.



Team Orlando is a partnership comprising military services, industry and academia that works to leverage resources and contribute to the overall security of the U.S. The modeling and simulation technologies developed and supported in Orlando have proven to be essential in training warfighters and testing their combat systems.

Team Orlando is also taking on expanded roles in homeland security and the global war on terrorism. Examples of technologies, products and services led by Team Orlando include:

- Mobile military operations in urban terrain
- Combat trauma patient simulator
- AV-8B Radar night attack weapon systems
- Virtual target and range system

Responding to the rapid rise of MS&T endeavors in the area, the University of Central Florida:

- Established the Institute for Simulation and Training in 1982
- Began one of the nation's first Master's degree programs in simulation and training systems in 1984
- Implemented a Doctoral program in simulation and training, becoming one of the few institutions in the U.S. to offer advanced degrees in the field

To combine the strengths and resources of academia, industry and government, the Central Florida Research Park was developed in the 1970s. Located adjacent to UCF, the Research Park is one of the world's top 10 and comprises more than 100 high tech companies, including several focused on MS&T.

The MS&T industry in Metro Orlando is also supported by the [National Center for Simulation](#), a non-profit corporation committed to advancing simulation technology in this region and across the country.

Additionally, Embry Riddle Aeronautical University, located in nearby Daytona Beach, is one of the country's top aviation and aerospace schools, offering prominent flight simulation and air traffic control simulation programs. The university also offers co-research opportunities to companies working within the aeronautics field.

In 1985, the governor and cabinet of Florida issued a resolution recognizing and endorsing a Center of Excellence for MS&T in Metro Orlando. The resolution affirmed the continued development of modeling and simulation technologies across a broad range of commercial and military applications.

Marketplace

Metro Orlando is home to 100+ companies focused on modeling, simulation and training (MS&T), which accounts for a large portion of the total MS&T industry gross product nationwide. These organizations combined employ more than 12,500 workers (direct) and have a total gross regional product of more than \$3 billion.

The MS&T market in Metro Orlando has expanded over the years from being military centric to encompassing a wide variety of industry segments, such as:

- Medical research
- Education
- Transportation planning
- Amusement thrill rides
- Public safety

With many cross-over applications, the strength of the MS&T cluster has helped influence the growth of the region's burgeoning digital media sector. The chart below represents the convergence of MS&T and other industries that bolster digital media.

FOUR PILLARS OF DIGITAL MEDIA



Following the terrorist acts against the U.S. on Sept. 11, 2001, there has been great interest in applying MS&T technology toward homeland security initiatives. The industry predicts federal funding will be made available to explore new ways to use this technology—such as training for airport screeners and command center decision-makers—to strengthen security and emergency management techniques across the country.

Workforce

With the nation's largest concentration of business, research and educational facilities dedicated to modeling, simulation and training (MS&T), Metro Orlando is teeming with proficient workers who have a broad range of applicable skills in the field. The industry, along with businesses that provide related support services and equipment, accounts for more than 12,500 jobs in the region.

Workforce Florida, Inc., WORKFORCE CENTRAL FLORIDA (WCF) and the Metro Orlando Economic Development Commission have joined to sponsor a workforce development program for the MS&T sector. This initiative will focus on helping companies diversify their business through increased knowledge in business development and workforce training.

Metro Orlando has more than 20 fully-accredited institutions of higher learning, which place approximately 85 percent of graduates into the local workforce. The University of Central Florida (UCF), with over 56,000 students, is a key contributor to the quality of the employee pool in this region. In addition to being one of the few universities in the country to offer both Master's and Doctoral level MS&T programs, UCF founded the Institute for Simulation and Training, a world-class research facility. As a result, MS&T businesses in Metro Orlando have access to a continual "brain trust" of individuals pursuing breakthrough progress in the field.

UCF annually confers thousands of undergraduate, Master's and Doctoral degrees in disciplines related to MS&T, including computer science, psychology (clinical and industrial/organizational), engineering, mathematics and physics. The many community and technical colleges that offer MS&T studies complement the programs at UCF and help fulfill the staffing needs of the industry in positions such as:

- Engineers
- Computer Graphics
- Computer Modeling
- Computer Technician
- Electronics Technician
- Hydraulic Specialists
- Infrastructure Specialists
- Machinists
- Operational Concept Analyst
- QA Tester
- Systems Analyst
- Systems Designer
- Weapons Effects Specialists

Education

Metro Orlando features some of the most progressive educational and research facilities in the country dedicated to furthering the success of the modeling, simulation and training (MS&T) industry. Forming the backbone of MS&T education is the [University of Central Florida \(UCF\)](#), which is among the first academic institutions in the U.S. to offer interdisciplinary graduate studies in MS&T. UCF also operates one of the country's leading research facilities dedicated to advancing the field.

UCF offers post-graduate studies leading to Master's and Doctoral degrees in modeling and simulation for scholars in:

- Engineering
- Computer science
- Psychology
- Mathematics
- Other related fields of study

Graduate students can concentrate on one of seven modeling and simulation focus areas, including:

- Infrastructure
- Computer visualization
- Human systems

UCF's [Institute for Simulation and Training \(IST\)](#) is an internationally-recognized research institute that focuses on advancing modeling and simulation technology and increases the understanding of simulation's role in training and education.

The institute's mission is to advance the state of the art and science of modeling and simulation and help guide the future of the industry by:

- Performing basic and applied simulation research
- Supporting education in modeling and simulation and related fields
- Serving public and private simulation communities

With funding from its designation in 1998 as one of 13 new transportation centers under the University Transportation Centers program, UCF established the [Center for Advanced Transportation Systems Simulation \(CATSS\)](#). The objective of CATSS is to apply computer simulation, driving simulators, virtual reality and other advanced technology to improve the planning, design, operation and safety of transportation systems.

UCF also works with local community colleges to establish a two-year simulation technical program with articulation agreements to four-year programs. The university has additionally worked with local high schools to develop simulation-based magnet programs.

[Embry Riddle Aeronautical University](#), the world's largest, fully accredited university specializing in aviation and aerospace, features some of the country's most sophisticated air traffic control and flight training simulation systems. Researchers use simulation technologies ranging from the Total Airspace and Airport Modeler (TAAM) to several proprietary tools developed at Embry-Riddle. Under development is a simulation facility where air traffic controllers, pilots, and researchers will be able to test new procedures and systems for the national airspace system.

Industry Organizations & Involvement

With a long history of excellence in the field of modeling, simulation and training (MS&T), Metro Orlando boasts numerous entities dedicated to promoting and contributing to the success of the industry. Following are brief overviews of a sampling of these organizations:

[National Center for Simulation \(NCS\)](#)

Headquartered in Orlando, NCS was formed in 1994 to advance simulation technologies and serve as an essential link between the defense industry, government, and academia engaged in research, development and applications of this sector on behalf of the entire simulation, training, and modeling community. Its mission is to serve as the nation's focal point and as a catalyst for the development, understanding, and advancement of simulation and related technologies; to improve defense readiness and facilitate space exploration; to support education and training initiatives; and to extend useful applications of simulation.

Department of Information and Learning Technologies (DILT)

The University of Central Florida (UCF) founded the Department of Information and Learning Technologies to serve as a central resource for information technology applications among members of the MS&T community. Operated by UCF's Institute for Simulation and Training, the DILT provides a variety of information technologies and techniques to support the MS&T community.

Team Orlando

Orlando's military commands are integral partners in a cooperative organization known as Team Orlando. Other partners include the Army Research Institute, University of Central Florida's Institute for Simulation and Training, University of South Florida, NASA, Florida High Tech Corridor Council, Metro Orlando EDC, Orlando Regional Chamber of Commerce and National Center for Simulation.

Women In Defense (WID)

WID is a national security organization and an affiliate of the National Defense Industrial Association, was incorporated in 1985. Their mission is to cultivate and support the advancement and recognition of women in all aspects of national security. WID, a non-profit organization, was established to provide women with a formal environment for professional growth through networking, education, and career development. The Women In Defense Central Florida Chapter (WID CFL) is proud to be the fourteenth sanctioned chapter in the United States and among the fastest growing and newest chapters. The region represented by WID CFL encompasses the entire state of Florida.

In addition to the numerous professional organizations and events attended and hosted by the Metro Orlando EDC, other various local, national and international attended industry events are held in Metro Orlando:

- **Interservice/Industry Training, Simulation and Education Conference (I/ITSEC)**
The Interservice/Industry Training, Simulation and Education Conference (I/ITSEC) – organized by the National Training and Simulation Association (NTSA), an affiliate of the National Defense Industrial Association (NDIA) – promotes cooperation among the Armed Services, Industry, Academia and various Government agencies in pursuit of improved training and education programs, identification of common training issues and development of multiservice programs.
- **Defense GameTech Users' Conference**
Hosted by Team Orlando, GameTech is a unique user-focused conference dealing with gaming technologies that enhance warfighter training and serves as an update on gaming and virtual world projects and trends within the military.
- **World Aviation Training Conference & Tradeshow (WATS)**
WATS, organized by Halldale Media Group, is an industry event dedicated to the airline training world. Four dedicated conference streams - World Airline Pilot, Regional Airline Pilot, Maintenance and Cabin Crew - address the training needs of major and international carriers, regional airlines, discount and low cost carriers.

Incentives

When it comes to pro-business orientation, one would be hard-pressed to identify a better example than Metro Orlando. Both Florida and Metro Orlando offer attractive incentives to qualifying companies relocating and expanding. Elected officials have demonstrated their commitment to economic development through the adoption of incentive packages based on the needs of the company.

This assistance is provided on a case-by-case basis, with job creation, quality of wages and capital investment being the significant deciding factors. The state and local tax climate can also be considered an incentive to investing in the region. Available incentives include:

- Industry-Specific Incentives
- Workforce Training
- Site-Specific Incentives
- Infrastructure Incentives
- Tax Exemptions

For more details on the incentives listed here, please visit the "[Relocate & Expand/Incentives](#)" section of the Metro Orlando EDC's website at OrlandoEDC.com.

Company Profiles

Metro Orlando is one of the nation's fastest growing high tech regions and has long been recognized as a leading center for modeling, simulation and training (MS&T). The region's MS&T industry has capitalized on the convergence of numerous support organizations and research institutions, as well as community commitment and outstanding business opportunities. Below are overviews of a sampling of MS&T companies operating in Metro Orlando:

[Adacel Technologies](#)

Adacel Technologies is a leading developer of advanced simulation and control systems for aviation and defense. The company operates in the Global Aerospace Systems market including Operational Air Traffic Management, Airport and Air Traffic Control Training, and Airborne Vehicle Systems. Within this market space, Adacel focuses on three converging domains: Real Time Software, Simulation and Support, and Voice Control Technology. The company was established in 1987 and listed on the ASX in 1998. Since then, it has grown rapidly and now has operations in North America and Europe, as well as Australia. Orlando is the home for Adacel's North American Business Headquarters.

[Advanced Interactive Systems \(AIS\)](#)

AIS is a leader in the development of real-time, networked, multi-participant virtual simulations. As a recognized authority on Department of Defense (DOD) architecture requirements and standards for simulation systems, the company's engineering group delivers virtual simulation systems for a wide range of military and public safety training environments.

[Applied Research Associates, Inc. \(ARA\)](#)

ARA is an international research and engineering company recognized for providing technically excellent solutions to complex and challenging problems in the physical sciences. They have a broad range of technical expertise in defense technologies, civil engineering, computer software and simulation, systems analysis, environmental technologies, and blast testing and measurement. They also provide sophisticated technical products for environmental site characterization, pavement evaluation, and specialized robotic vehicles.

DiSTI Corporation

DiSTI is a certified small business founded in 1994 by three faculty members of the University of Central Florida in response to the need for distributed simulation consulting, development, and training. DiSTI has become a global leader in the development of Human Machine Interface tools and technology. DiSTI's industry leading flagship product, GL Studio®, enables the development of real-time 3-D human machine interfaces for use in a variety of simulation, training, and safety critical applications.

Dynamics Research Corporation (DRC)

DRC has been a leader in modeling and simulation for over 20 years. A founding member of the National Center for Simulation, DRC develops dynamic models that logically represent the actions of simple electronic components, as well as large, complex human processes and organizations. DRC is also an industry leader in the development of simulation-based reengineering (SBR) techniques.

Engineering & Computer Simulations (ECS)

ECS is an employee-owned business located adjacent to Central Florida's Research Park. Since 1997, ECS has focused on increasing the cinematic realism of virtual environments for military training, real-time architectural rendering, as well as advanced distributed learning.

Environmental Tectonics Corporation (ETC)

ETC is a global company with offices and affiliates in many countries. Their corporate headquarters is based in Southampton, Pennsylvania, and their ADMS Innovation Center is located in Orlando. ETC has been committed to providing customized top class simulation and equipment solutions for government agencies and emergency responders since its inception in 1969 – specializing in simulating authentic environments in products such as disaster management simulation systems, aircrew training systems and entertainment systems. Example products are flight simulators, training simulators, flight centrifuges, hyperbaric chambers, sterilization equipment, the National AeroSpace Training and Research Center (NASTAR Center) and the Advanced Disaster Management Simulator (ADMS™).

Indra Systems, Inc.

Indra is a leading provider of automated test equipment and simulation and training solutions for air, land, and sea platforms for both military and commercial applications. In addition, the company provides on-site engineering, technical, and logistics services to a wide range of domestic and international customers. Indra serves a wide customer base, including the U.S. Department of Defense and aircraft manufacturers, and is available through several existing government contract vehicles, including STOC II, TSC II, and Seaport-e.

Based in Winter Park, FL, Indra Systems Inc. is the U.S. subsidiary of Indra Sistemas, S.A., a \$3.5B international defense and information technology company.

JHT Incorporated

JHT Incorporated is a privately held company headquartered in Orlando providing services in Training (computer and web-based instruction, desktop simulations), Technical Data Management, Environmental and Marine Sciences, Management and Operations Support, and Construction. JHT began as a small business in 1990 dedicated to developing training programs for the Department of Defense and affiliated agencies. Since that time, JHT has expanded their services and grown to more than 400 employees located in 30 states.

Lockheed Martin

Lockheed Martin is a global security company that employs 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. Two Lockheed Martin businesses – Missiles and Fire Control and Simulation and Global Training & Logistics, headquartered in Orlando – as well as the corporation's internal business services division, employ more than 7,000 people in the region and manage billions of dollars worth of defense contracts.

Northrop Grumman

Northrop Grumman Corporation is a leading global security company whose 120,000 employees provide innovative systems, products, and solutions in aerospace, electronics, information systems, shipbuilding and technical services to government and commercial customers worldwide.

Northrop Grumman has four offices located across the region, with more than 1000 local employees. Orlando-based customers include the Army's Program Executive Office for Simulation, Training, and Instrumentation; the Navy's NAVAIR Training Systems Command; the Marine Corps' Program Manager Training Systems; and the Air Force's Agency for Modeling and Simulation.

Saab Training USA

Saab Training USA develops, manufactures and supports world-leading systems and services for the U.S. Military, Foreign Military Sales, Homeland Defense and other defense applications. Saab's systems are modular and scalable, mobile or stationary, and can be customized for any training requirement – from the needs of the individual war fighter up to the highest tactical level. Solutions cover everything from basic gunnery and skills training to tactical training in instrumented combat training facilities.

Science Applications International Corporation (SAIC)

Based in McLean, VA, SAIC employs 45,000 worldwide and is the world's largest, employee-owned research and engineering company providing information technology, systems integration and eSolutions to commercial and government customers. The company's engineering focus has been solving complex technical issues in:

- Homeland security
- Energy
- Environment
- Telecommunications
- Healthcare
- Transportation

SAIC's Orlando unit employs more than 400 engineers, programmers, and other support worker in defense training technology and is responsible for the design and implementation of constructive domain systems, which include automated simulations representing the actions of people and systems within the simulation. Recently, the Army's Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) awarded the company a 28-month contract worth up to \$12 million. Under the contract, work will mostly be performed by SAIC's Orlando operation.

Wyle

Wyle is a leading provider of high tech aerospace engineering and information technology services to the federal government on long-term outsourcing contracts. The company also provides: biomedical and engineering services for NASA's human space missions; testing and evaluation of aircraft, weapon systems, networks, and other government assets; and engineering services to the aerospace, defense, and nuclear power industries. The company is headquartered in El Segundo, CA and employs approximately 4,800 employees at more than 40 facilities nationwide, including an office in Orlando.