The AEgis Technologies Group
World Leadership in Modeling, Simulation, and Microsystems Technologies

Products & Services
The AEgis Technologies Group, Inc. is a privately held small business corporation, headquartered in Huntsville, Alabama. Our capabilities include Modeling & Simulation development, training, test support, engineering analysis, hardware design, and nanotechnology manufacturing for both government and commercial customers within the United States and internationally. AEgis has enjoyed steady growth with revenues increasing to more than $50+ million in sales and employment of 245 professionals. AEgis has been instrumental in the acceptance of M&S as a profession, as a graduate program of study among many colleges and universities, and in the creation of an M&S standard across the international M&S professional community of practice. Since its founding in 1989, AEgis has been committed to honesty and integrity and has been recognized for its honorable business practices by receiving the Better Business Bureau’s Torch Ethics Award. Our highly skilled work force is dedicated to building lasting relationships and providing superior products and services to our customers.

William F. Waite
Chairman and Chief Technical Officer

Steven S. Hill
President and Chief Executive Officer

Lance Cooper
Chief Operating Officer

Rodney Kreps
Chief Financial Officer
Simulation Products

AEgis supplies commercial modeling and simulation software tools, motion-based maneuver trainers, MEMS, Photonics, and microfluidic devices to industries around the world that require advanced aerospace simulation, automotive simulation, biomedical modeling and simulation, electronics simulation, missile modeling and simulation, petrochemical, power generation, and process control modeling and simulation software and tools.

Simulation Training Systems

AEgis is an innovative developer of training devices and simulators for current and advanced conceptual systems. Utilizing commercial-off-the-shelf products, open source initiatives, and a highly experienced engineering staff, AEgis consistently delivers fully configured training and simulation solutions that include hardware, software, and services.

Geospatial Programs

AEgis offers GIS feature extraction and compilation from High Resolution Imagery based on required level of detail to meet or surpass modeling and simulation requirements. AEgis provides a low cost, high performance solution for the creation of Correlated Terrains, 3D Vehicles, 2D Maps, various SAF outputs, and Complex Building Features.

HWIL Simulation Systems

AEgis is a developer and integrator of software and hardware solutions for the real-time Hardware-in-the-Loop (HWIL) simulation of weapon systems. This includes the development, operation and analysis of 6-Degree-of-Freedom simulations, physics-based real-time EO/IR/UV scene generation systems, sensor test systems, and distributed simulation frameworks.

Warfighter Exercise Support

AEgis integrates existing simulations and COTS products to develop unique, innovative, flexible, and comprehensive simulation solutions. AEgis has extensive experience with software delivery and integration providing end-to-end worldwide support to major battle command training facilities.

Systems Engineering and Analysis

AEgis provides systems engineering and support services to major defense programs. Our focus areas include strategic planning analysis, modeling and simulation support, resource management, schedule development and assessment, program integration and management, international program support, systems analysis, integration, and system design.

Verification Validation & Accreditation

AEgis is a leader within DoD in the development of M&S VV&A strategies and execution of VV&A Plans. AEgis-View™ clearly defines the supporting V&V data products, M&S Units Under Test (UUTs), associated V&V activities, agents, and resources for cost-effective VV&A program execution from concept to deployment.

Test & Evaluation

AEgis provides Test and Evaluation support across a broad range of applications and across the spectrum from research level T&E to operational T&E. AEgis has provided superior support in the areas of test planning, test execution, data analysis and reporting, and the development of test instrumentation.

Microsystems/Nanotechnology

Nanogenesis, A division of AEgis Technologies

AEgis is focused on projects at the cutting edge of micro and nanoscale science and technology. Our team has applications ranging from defense to biotechnology and is capable of advancing micro and nanoscale technologies from concept to deployment.
VAMPIRE

XPT for Andros
A feature-rich training simulator for the Remotec Andros F6A robot, integrated with a high fidelity physics engine. System offers scenario-based training and includes all features and capabilities of the Andros F6A robot.

LightINT
An easy to use real-time 3D viewing application, featuring line-of-sight (LOS), the ability to import and visualize shapefiles, and place and maneuver real-time 3D elements on terrain.

MODUS
A 3D visualization tool designed for Mission Planning and After-Action-Review of high interest, high fidelity, geo-specific areas. MODUS combines state-of-the-art visualization capabilities with special tools to inspect, plan, execute and replay a variety of mission objectives.

BattleStorm
AEGis Technologies simulation framework to build multiple, diverse types of networked simulators.

ImageScape
AEGis and DigitalGlobe’s ImageScape is a merger of high-resolution satellite imagery and Digital Elevation Models (DEM) to provide the user a rich real-time 3D viewing capability.

3D Elements
An extensive library of real-time 3D models, 2D maps, CTDB and other SAF outputs, complex buildings, cultural features, and customized geospatial services with full GIS integration.

acslX®
The modeling, execution, and analysis environment for continuous dynamic systems and processes.

Pitch
AEGis is the exclusive North American distributor for the simulation products of Pitch Technologies, AB., including the Portable Runtime Infrastructure (pRTI), Visual OMT, and HLA Commander.
AEGis is an innovative developer of training devices, simulators, and advanced conceptual systems. Utilizing commercial-off-the-shelf products, Open Source initiatives, and a highly experienced engineering staff, AEGis consistently delivers fully configured simulation and training solutions that include hardware, software, and services.

**Royal Saudi Air Force Bell 412 EP**
The Bell 412 EP Search & Rescue Full Motion Helicopter Simulator with exact cockpit representation was developed for the Royal Saudi Air Force (RSAF).
- Full Motion Simulator – six degrees of freedom
- Best of Breed approach to system design and build with AEGis as lead system integrator
- Five channel high fidelity visual system capable of NVG stimulation
- Off board and on board Instructor Operator Stations

**Directed Energy Simulation**
High fidelity virtual simulations of advanced weapon systems designed to look at how Directed Energy systems can be employed for Non-Lethal and Lethal Engagements.
- Talon
- ADS (Active Denial System)
- E-ATL (Enhanced-Advanced Tactical Laser)
- TRMS (Tactical Relay Mirror System)

**AndrosXPT**
The AndrosXPT Remotec F6-A Simulation Trainer is a feature rich embedded training system.
- High fidelity training system utilizing state of the art virtual reality simulation with game quality graphics
- Full physics engine emulates complete movement of the actual robot and stand alone objects
- Operate robot in realistic simulated environments

**VAMPIRE**
Visualization and Mission-Planning Integrated Rehearsal Environment is an Unmanned Air System (UAS) training tool.
- Fully emulates all operator functions for Family-of-Systems SUAS (Raven, Wasp, Puma)
- VAMPIRE runs on fielded Panasonic Toughbook and Ground Control Station
- Integrated and correlated with FalconView™
- Tailorable tactical scenarios with scripted, moving 3D human and vehicle models, urban areas, special effects
- Geo-specific terrain for any area of interest

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Simulation Training Systems POCs

www.aegistg.com
Advanced computational methods and rendering algorithms developed by AEgis Technologies and satellite imagery supplied by partner DigitalGlobe enables us the ability to create 3D virtual models of any required location in the world – using the highest-resolution commercial data available – faster and more cost effective than anyone else in the industry.

Real-time 3D Modeling
AEgis has hundreds of High Fidelity 3D Models which include Building Models, Ground Vehicles, Animated Characters, Aircraft, and Others that can be integrated with many Geospatial Datasets and 2D/3D Viewing Applications.
- High Quality textures, including IR, damaged states and levels of detail
- Multiple paint schemes
- Articulation Beads where applicable
- Standard structure to ease integration
- Multiple open formats

Terrain Database Development
AEgis provides low cost, high performance solutions for the creation of terrain databases for areas of interest anywhere in the world.
- Correlated Terrains: visual, sensor, SAF, and 2D Maps
- Areas of interest sized from 10x10Km region to large country-sized dataset
- Full GIS Integration
- Multi-system interoperability

GIS Feature Extraction & Attribution
AEgis Technologies offers GIS feature extraction and compilation from High Resolution Imagery based on required level of detail to meet or surpass modeling and simulation requirements.
- Customized Geospatial Services
- GIS feature extraction
- 2D and 3D database development
- Geospatial Data Conversion
- Custom Map Design
- High Resolution Cultural Features
AEgis is a developer and integrator of software and hardware solutions for the real-time Hardware-in-the-Loop (HWIL) simulation of weapon systems. This includes the development, operation and analysis of 6-Degree-of-Freedom simulations, physics-based real-time EO/IR/UV scene generation systems, sensor test systems, and distributed simulation frameworks.

**EO/IR/UV Scene Generation**
AEgis is the primary developer of real-time scene generation systems for AMRDEC HWIL Simulations
- AEgis develops SW/HW systems to provide physics-based modeling and phenomenology to create real-time high dynamic range scenes
- Multispectral EO sensor testing via dynamic scene projection and signal injection (IR/UV/ SAL/LADAR)

**AMRDEC Strategic Defense Activity**
AEgis supports the AMRDEC Strategic Defense Division Systems Engineering, Systems Analysis, and Technical Support.
- AMRDEC activities support the MDA’s ongoing development, testing, and deployment of the BMDS
- AEgis provides Strategic planning, system engineering, systems analysis, V&V, technical, and management support using constructive and distributed digital models

**Missile Defense Agency HWIL Framework Development**
AEgis supports the OCI of the Single Simulation Framework (SSF) used as the simulation framework for all BMDS HWIL exercises.
- Systems Engineering, Architecture Definition & Exercise Planning
- Element Integration, Test Execution & Operations Support
- SW/HW evaluation and analysis

**AMRDEC and KHILS HWIL Development**
AEgis supports the development and operations of Weapon System HWIL Simulation at the AMRDEC and KHILS facilities.
- Real-Time HWIL simulation of tactical, air defense, and strategic weapon systems in MMW, EO/IR/UV, SAL & LADAR bands
- Development of scene generation systems, 6-DOF simulations, SW/HW sensor interfaces
- Simulation integration, Verification and Validation and operations support

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AEGis provides warfighter exercise support for the United States Army, Air Force, and Joint Forces Battle Command Systems. AEGis integrates existing simulations and COTS products to develop unique, innovative, flexible, and comprehensive simulation and training solutions.

### Air Force Modeling and Simulation Training Toolkit
AFMSTT supports military organizations by providing the air war simulation for senior commanders and battle staffs for training in the execution of joint and combined operations.

- A group of software applications designed to provide a range of operational environments for mission training
- The toolkit is built around the Air Force’s Air Warfare Simulation (AWSIM) model
- AEGis support for the AFMSTT includes software development, system test and evaluation, software maintenance and on-site technical support for rapidly fielded baselines at exercises and events

### Battle Command Training Integration
AEGis supports the Lead Systems Integrator of the US Army’s Joint Land Component Constructive Training Capability, Entity Resolution Federation (JLCCCTC ERF) for PEO STRI and the National Simulation Center (NSC).

- Software delivery and integration providing end-to-end world-wide JLCCCTC ERF support to major Battle Command Training Facilities in US Army operation theaters worldwide
- Delivery of a validated constructive training simulation that provides realistic training to Army staff elements at the Army Brigade and below level through the stimulation of Army Command and Control (C2) systems training

### OneSAF Software Distribution and Training
Prime contractor for the OneSAF Objective System (OOS) Advanced Concept Requirements (ACR), Training, Exercises and Military Operations (TEMO), and Research, Development, and Acquisition (RDA).

- Develop requirements and working parameters for software distribution
- Facilitates user and instructor training for the Army’s modeling and simulation domains
AEGis provides systems engineering and support services to major defense programs. Our focus areas include strategic planning analysis, resource management, schedule development and assessment, program integration and management, international program support, systems analysis, integration, and system design.

Missile Defense Agency
AEGis provides programmatic and technical support to MDA BC and participates in the MDA C2BMC Communications Connectivity Task Force (CCTF). AEGis provides communications requirements to:
- U.S. Army THAAD and PATRIOT programs
- U.S. Navy Aegis Ballistic Missile Defense (BMD) systems
- MDA specific systems

AFRL Directed Energy Directorate
AEGis provides contractor leadership to AFRL/RDTA’s contractor Modeling, Simulation, Analysis, and Wargaming (MSAW) Team. AEGis also provides direct support in the areas of:
- Modeling and simulation (M&S) development
- Directed energy (DE) mission analysis and assessment
- DE concept development
- Wargaming

Technology Protection
AEGis Technologies provides Information, Program and Technology Protection solutions for major defense programs.
- Supporting responsibilities under DODD 5200.39, AR 70-1, and DA PAM 70-3
- Utilizing a layered approach to Program Protection

Airborne Laser System Program Office
AEGis provides support to the Airborne Laser (ABL) program for the Missile Defense Agency (MDA).
- Provide digital federation models and simulations to support critical decisions concerning the ABL
- Establish the credibility of ABL M&S and identify to decision makers the risks inherent in their use
AEgis is a leader within DoD in the development of Modeling and Simulation (M&S) Verification Validation & Accreditation (VV&A) strategies and execution of VV&A Plans. AEgis-View™ clearly defines the supporting V&V data products, M&S Units Under Test (UUTs), associated V&V activities, agents, and resources for cost-effective VV&A program execution.

Joint Land Attack Cruise Missile Elevated Netted Sensor System Modeling and Simulation
AEgis supports the Cruise Missile Defense System Project Office (CMDSPPO) Joint Land Attack Cruise Missile Elevated Netted Sensor System (JLENS) product.
- Technical analysis and VV&A assessment support
- Rigorous V&V of the respective M&S to ensure the coded implementations accurately represent the mathematical algorithms and code integrity

Missile Defense Agency Modeling and Simulation
AEgis provides VV&A support of major MDA T&E resources and M&S.
- V&V planning, execution, oversight, and accreditation support and recommendations for several MDA programs on behalf of the integrated MDA mission
- Evaluation and assessment of test resources and M&S include studies and analyses to document scope and results of V&V activities

Air Borne Laser
AEgis supports the Performance & Analysis Branch in ensuring the appropriate set of credible models and simulations are available to support critical decisions concerning the design, acquisition, deployment, and operation.
- Support the branch in a variety of exercises and wargames to demonstrate the ABL capabilities

NASA
AEgis supports continued development and refinement of VV&A plans, procedures, and subsequent implementation activities.
- Key to AEgis’ maturation of its VV&A plans and processes is the capture of application-derived changes and timely feedback

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AEgis Technologies provides full spectrum Test and Evaluation (T&E) support across a broad range of applications. From research to operational T&E, the company has provided superior support in the areas of test planning, test execution, data analysis, and reporting, as well as the development of cutting-edge test instrumentation.

Non-Traditional Test and Assessment
AEgis has served as independent assessment agents for 10+ years, providing timely, targeted test planning, analysis, and reporting for fast-moving Joint Capability Technology Demonstrations and Battle-lab Experiments.

- Full range of systems, from global strategic to street-level tactical
- Informative data analysis – what’s important for decision makers
- Surge support to accommodate multiple, simultaneous projects

Traditional T&E
AEgis has professional T&E staff that plan, conduct, analyze, and report on test events that support formal acquisition programs in the DoD and other federal agencies.

- Staff qualify as Certified Acquisition Professionals for T&E
- Proven processes for all facets of test planning, execution, and reporting
- Hands-on experience at applicable DoD test ranges and labs

T&E Instrumentation
AEgis is providing industry leading development of instrumentation designed to measure high energy laser and high power microwave energy directly on the targets at which they are aimed.

- Leading-edge research to tailor sensor needs for individual projects
- Complete system solution – sensor, electronics, visualization, telemetry

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Nanogenesis specializes in transitioning game-changing technology from the laboratory to the field. This creative group of engineers and scientists focuses on bringing novel micro and nano scale systems to life. Technologies include HWIL simulation to biosensors to Directed Energy and solar energy collection. The multidisciplinary team is co-located at AEgis corporate headquarters (Huntsville), AEgis Laser Laboratories (Albuquerque), Oak Ridge National Labs and Redstone Arsenal.

Nanophotonics
The Nanophotonics team combines theoretical modeling with nano scale engineering to develop devices, sensors and materials with superior capabilities.

- Combining nonlinear optical materials with plasmonic structures to create new devices used in photonic circuits, optical computing and solar energy collection
- Developing conformal sensors that use nanocrystal detection technology fabricated on thin, flexible substrates to measure High Energy Laser beam characteristics
- Developed transparent metal material that protects soldiers’ vision from laser and RF threats

Microsystems
The Microsystems team is focused on MEMS, Micro-optics, Miniature Guidance, Hardware-In-the-Loop testing, and aerospace applications.

- Provides signal generation electronics and electro-optics, custom ASICs [Trusted Foundry Access], MCM, and system level engineering
- Significant expertise in the development of MEMS devices including RF components, tactical grade IMU, nonlinear-polymer based components, and inertial sensing for target discrimination

Physics-Based Modeling and Simulation
Our scientists have extensive expertise in modeling MEMS, RF, Thermal, Fluid, Optical, Chemical and Biological systems to create custom physics models that play an integral role in the design and development of new technology.

- Testing and verification of behavioral and structural models in microelectronic designs before synthesis tools translate the models into actual hardware
- Developed a versatile, multi-dimensional inverse heat conduction (IHC) platform
**Life Science**

AEgis is applying its experience in micro and nanotechnology to develop electrochemical sensors, microfluidics, cell sorting devices and ultra-miniature immunoassays.

- Opportunities for clinical detection of medical conditions and screening tools, including short turnaround time (STAT), single use and point of care testing devices
- Developed modeling tool acsIX® that predicts drug dispersion and residual drug levels for toxicity and therapeutic threshold analysis, helping speed new drugs to market

**Laser Science**

Our scientists have developed novel instrumentation for Directed Energy systems.

- Providing High Energy Laser (HEL) community with high-resolution beam profilers that use nanoparticles for direct detection of laser irradiance profiles
- Developing conformal sensor array that correlates irradiance and target temperatures for on-board lethality measurements to quantify HEL weapons effectiveness
- Developed suite of physics-based models from inverse heat conduction to underwater laser propagation

**RF and Terahertz Technology**

Our advanced technology development efforts span the frequency range from a few GHz to 10 THz.

- Developing micro devices to quantify important parameters for High Power Microwave sources and targets
- Terahertz Imaging Profiler Array (TIPA) is a multispectral imager and source profiler that provides a 3D cube of information from 0.2 to 0.9 THz
- Developing next-generation THz focal plane arrays for compact imaging systems that operate in the 2 to 10 THz regime

**Test Instrumentation and Analysis**

Our team approaches testing with an understanding of the complex interactions among instrumentation, experimentation, and analysis.

- Developing high spatial resolution sensor array technology that allow unprecedented measurement of temperature and energy
- Use a variety of analysis tools, including general purpose finite element software, multi-dimensional direct and inverse heat conduction codes, and experimental data analysis
- Experienced personnel provide design, set up, support, and execution of world-class experimentation

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Business Support Locations

Huntsville, Alabama • Corporate Headquarters

410 Jan Davis Dr
Huntsville, AL 35806
Phone: 256-922-0802
FAX: 256-922-0904
Clearance Level - Top Secret
Total SQ FT - 50,000
Conference Rooms - 8
SCIF/Classified Storage/AIS - 2 labs, 8 Safes

1911 North Fort Myer Dr • Suite 605
Arlington, Virginia 22209
Phone: 703-528-8620
FAX: 703-528-8604
Clearance Level - Top Secret
Total SQ FT - 2,087
Conference Rooms -1
SCIF/Classified Storage/AIS - 2 Safes

Orlando, Florida

12000 Research Pkwy • Suite 236
Orlando, Florida 32826
Phone: 407-380-5001
FAX: 407-380-7902
Clearance Level - Top Secret
Total SQ FT - 10,000
Conference Rooms - 1
SCIF/Classified Storage/AIS - 1 Safe

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Orlando, Florida 32826
Phone: 407-380-5001
FAX: 407-380-7902
Clearance Level - Top Secret
Total SQ FT - 10,000
Conference Rooms - 1
SCIF/Classified Storage/AIS - 1 Safe

Albuquerque, New Mexico

6565 Americas Pkwy • Suite 825
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Phone: 505-881-1003
FAX: 505-881-5003
Clearance Level - Top Secret
Total SQ FT - 7,640
Conference Rooms -1
SCIF/Classified Storage/AIS - 2 Safes

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FAX: 703-528-8604
Clearance Level - Top Secret
Total SQ FT - 2,087
Conference Rooms -1
SCIF/Classified Storage/AIS - 2 Safes

www.aegisstg.com
“AEgis employees are committed to ensuring our customers’ success, one relationship at a time...”

Steven S. Hill
President/CEO