



TECHNOLOGIES AND SERVICES

**WORLD LEADERSHIP IN
MODELING AND SIMULATION**

A Egis
Technologies

ABOUT AEGIS TECHNOLOGIES



-  Office Locations
-  On-site Personnel

The AEGIS Technologies Group, Inc. is an internationally recognized leader in Modeling and Simulation supporting the entire life cycle of M&S programs through our engineering services, hardware and software products, and professional training. Our global client base includes aerospace, defense, automotive, biomedical, chemical, and other process industries. Founded in 1988, AEGIS is a privately held company headquartered in Huntsville, Alabama with offices and representation throughout the USA, Canada, Europe, and Asia-Pacific. AEGIS Technologies provides innovative engineering services in the following technology areas:



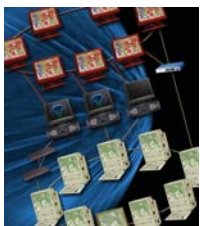
SIMULATION DEVELOPMENT

Simulation systems that enhance the warfighter's proficiency while minimizing training cost within the live, virtual, and constructive (LVC) domains



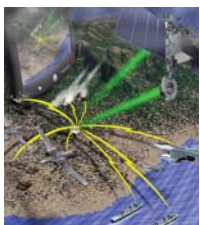
TRAINING DEVICES

Development of low cost high fidelity training devices and simulators for current and advanced conceptual systems based on COTS products and technologies.



SIMULATION INTEGRATION

Integrating existing simulations and COTS products to develop unique, innovative, flexible, and comprehensive simulation and training solutions



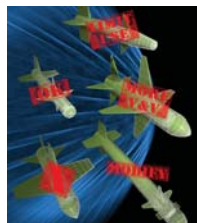
SYSTEMS ANALYSIS

Enhancing warfighter effectiveness by solving complex problems in the simulation domain, and arming the decision maker with options



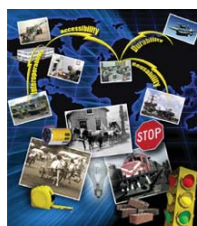
SYSTEMS ENGINEERING

Systems Engineering and Strategic Support planning, resource management, schedule development, and program integration.



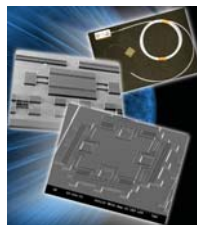
M&S VV&A

M&S VV&A strategies and execution of VV&A plans utilizing AEGIS' Managed Investment Strategy™ to support V&V data products



SIMULATION TECHNOLOGIES

M&S expertise across a variety of M&S technologies research, development, training and standards



MICROSYSTEMS TECHNOLOGIES

Cost effective MEMS, photonics, and microfabrication solutions to military and commercial industries in the areas of guidance and control, hardware-in-the-loop simulation, electro-optics, and advanced sensors

AEgis is uniquely qualified to create seamless environments comprised of live, virtual and constructive (LVC) components. Our extensive experience in simulation development is helping us lead the initiatives of several training systems for future weapon systems into comprehensive training exercises that detail the realities of tomorrow's missions today.

At the core of many of these simulators is an AEgis developed simulation framework product called BattleStorm™. This flexible architecture provides future expansion and growth throughout the lifecycle of the simulator.



DIRECTED ENERGY MODELING

The AEgis HEL-MODSIM effort is sponsored and funded by Boeing with the goal of developing a distributed modeling and simulation (MODSIM) environment to analyze and evaluate a variety of High Energy Laser (HEL) Weapon Systems. These HEL weapon systems are in an integrated environment (airborne, ground based weapons, tactical relay and land/sea/air systems.) This cooperative integrates Subject Matter Experts and Directed Energy concepts from Boeing with AEgis MODSIM expertise, high fidelity trainers and DIS/HLA expertise.



TERRAIN DATA BASE DEVELOPMENT

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. Areas of interest may be sized anywhere from a small 10x10 Km region to a large country sized dataset. AEgis' specialized processes and hardware model areas of interest anywhere in the world with full GIS integration, multi-system interoperability, and real-time simulation protocols.



REAL-TIME 3D MODELING

AEgis creates High Resolution 3D Models which include damage states, sensor representations, articulations, and multiple LOD's. Models can be integrated with many Geospatial Datasets and 2D/3D Viewing Applications. AEgis has hundreds of High Fidelity 3D Models which include Building Models (hotels, malls, government buildings), Ground Vehicles (Stryker, Bradley, Hummer), Animated Characters (US military, insurgents), Aircraft (C130, F/A-22, JSF, Hind, Apache), and Other (IED's, munitions). www.realtime3Dmodels.com



AEgis is an innovative developer of training devices and simulators for current and advanced conceptual systems. Utilizing commercial-off-the-shelf products (including AEgis' BattleStorm) Open Source initiatives and a highly experienced engineering staff, AEgis consistently delivers fully configured training and simulation solutions that includes hardware, software, and services.

The flexible architecture and design of our simulators provides unlimited expansion and growth throughout the lifecycle of the program. With modular design and reuse of code, the dramatic savings through reduced development costs and shortened delivery dates, is passed on directly to our customers.

TACTICAL LASER SYSTEM SIMULATOR

Under contract to Northrop Grumman, AEgis Technologies has developed a simulator for Northrop Grumman's highly mobile, combat vehicle mounted, solid-state laser system. The TALON system is capable of providing U.S. ground forces with a revolutionary multi-role defense against rockets, artillery, mortar (RAM) and other aerial attacks. Using its BattleStorm® simulation framework, AEgis has provided a simulator that is easily transportable and utilizes a distributive simulation environment for testing and analysis of total system effectiveness.



ACTIVE DENIAL SYSTEM (ADS) ACTD TRAINING SYSTEM

The ADS ACTD training system allows operators to experiment with tactics, techniques and procedures as well as command and control issues relating to the ADS non-lethal weapons system. This system is designed to be used as a means to stop, deter, and turn back adversaries without having to resort to lethal force. The training system was originally developed as an analysis system and then grew into a training system that participated in several ACTD military utility assessments.



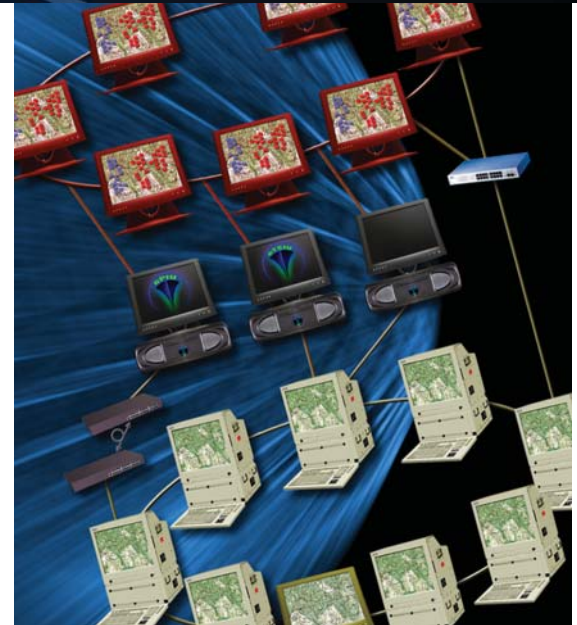
IMPROVED MOVING TARGET SIMULATOR (IMTS) UPGRADE

The IMTS Upgrade trains three STINGER Man Portable Air Defense System (MANPADS) gunners (individually or simultaneously) to identify, acquire, and track airborne targets and launch a STINGER missile. Training is conducted in benign, countermeasure and background environments within a controlled environment. The IMTS Upgrades were conducted for PEO STRI/PM TRASYS at Ft. Bliss, TX; Camp Pendleton, CA; Smyrna, GA; Cherry Point, NC; and Grand Forks, ND.



AEgis integrates existing simulations and COTS products to develop unique, innovative, flexible, and comprehensive simulation solutions.

- Turnkey Solutions for M&S Centers
- Integrating disparate simulations to create BCTCs
- Architecture development for Constructive Sim
- Integration of Army Battle Command Systems & C4ISR
- Network design and implementation for C4ISR Systems



C4I TRAINING INTEGRATION

AEgis is the Prime Contractor serving as the Lead Systems Integrator of the U.S. Army's Joint Land Component Constructive Training Capability, Entity Resolution Federation (JLCCCTC ERF) with extensive experience associated with software delivery and integration providing end-to-end world-wide JLCCCTC ERF support to major Battle Command Training Facilities. AEgis plans, schedules and executes software delivery and training based on requirements determined in close consultation with PEO STRI and the National Simulation Center (NSC).



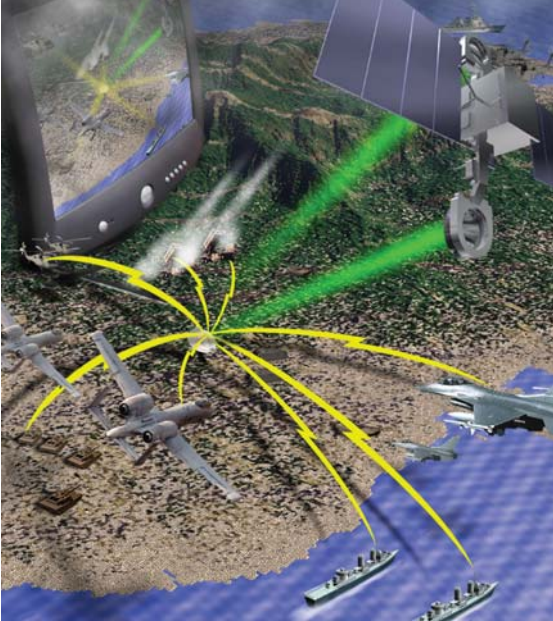
JOINT FORCES COMMAND ADVANCED TRAINING TECHNOLOGIES LABORATORY

AEgis has a proven track record of providing Confidence Assessment and Certification of systems for the Joint Forces Command Advanced Training Technology Laboratory (JATTL). Testing new systems in a joint environment and working through integration issues allows for a smooth transition of developmental systems into the training community. AEgis is directly contributing to the enhancement of the Joint National Training Capability (JNTC) as part of the Live, Virtual, and Constructive test bed support team.



ONESAF SOFTWARE DISTRIBUTION AND TRAINING

AEgis supports the OneSAF Objective System (OOS) Advanced Concept Requirements (ACR), Training, Exercises and Military Operations (TEMO), and Research, Development and Acquisition (RDA) requirements and working parameters for software distribution (scheduling, distribution, installation and training) and facilitates user and instructor training for the Army's modeling and simulation domains. AEgis supports the distribution program effort and training support for OOS's 14-user roles, instructor familiarization and optimal utilization of the OOS products.

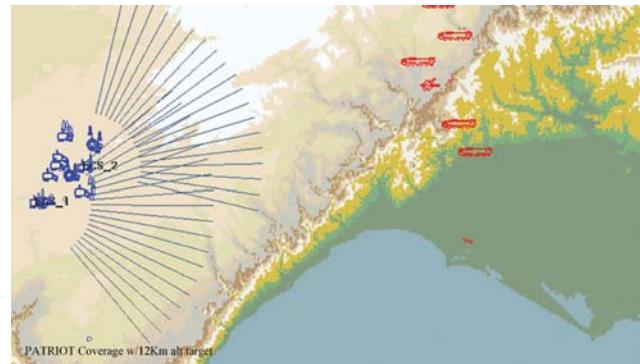


AEgis offers significant systems analysis expertise and utilizes numerous simulations and tools to produce modeling and simulation-based results in a meaningful format for decision makers. AEgis specializes in BMC3, C4ISR, weapon systems requirements, and interoperability analyses.

AEgis expertise with a variety of models and simulations such as EADSIM, EADTB, LIDS, CAPS, Firesim XXI, JCATS, and OneSAF enables application of tools appropriate to the required task. Simulation laboratories with numerous computer platforms, printers, and peripherals are available for systems analysis in our Huntsville, AL, Washington, DC, and Orlando, FL offices.

INTERNATIONAL STUDIES

AEgis supports Missile Defense Agency (MDA) and NATO Consultation, Command, and Control Agency (NC3A) in a variety of analysis efforts associated with Missile Defense. These analysis efforts investigate missile defense requirements, deployment options and engagement analysis. Efforts include requirements analysis for the NATO Air Command and Control Systems (ACCS) for missile defense, model comparison, technical advice on interoperability of missile defense systems and support of NATO Feasibility Studies.



SMDC HWIL SUPPORT

AEgis engineers currently support Exercise/Wargame Planning, and Process Improvement for the VV&A of HWIL-based systems such as the Missile Defense System Exerciser (MDSE). Additionally, we have been selected to investigate new and innovative Ideas for Advanced Technology Opportunities in Distributive Computing and Hardware in the Loop (HWIL). This effort includes developing innovative techniques for integrating Digital & HWIL models of the Ballistic Missile Defense System.



ARMY MISSILE HWIL TESTING

AEgis provides simulation and analysis support to Army and MDA Programs through efforts ranging from trade studies of Hypersonic Interceptors to hands-on operation and analysis of THAAD HWIL. Our analysts are equally adept at employing standard M&S tools (e.g., CAPS, EADSIM) or developing their own tools as necessary to achieve mission requirements. In addition, AEgis led studies on the use of the HLA Federation Execution Process (FEDEP) as a means of creating the capability to perform a system-level evaluation of the BMDS by federating existing Element accredited representations.



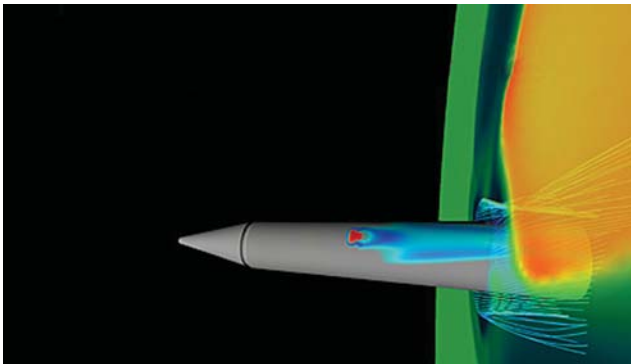
AEgis provides systems engineering and support services to a number of major defense programs. Our focus areas include strategic planning analysis, resource management, schedule development and assessment, program integration and management, international program support, systems analysis, integration,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

AEgis supports the systems engineering requirements of its customers through formal requirements definition, management, system design, implementation, verification and validation, test and evaluation, inventory control, configuration, data management, GFE, GFI tracking and control.



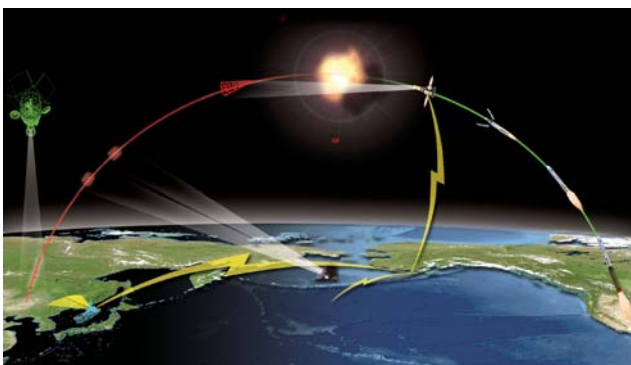
AIRBORNE LASER M&S AND ANALYSIS

AEgis provides support to the Airborne Laser (ABL) program for the NMD Ground Based Radar Project Office. AEgis ensures decision makers have the appropriate set of digital federation models and simulations available to support critical decisions concerning the ABL. As the Verification, Validation, and Accreditation (VV&A) Agent for ABL M&S, AEgis performs acceptability assessments on the On-Station Availability Model (OSAM), the Chemical Jettison Simulator (CJSIM), the Laser Range Safety Tool (LRST), the Atmospheric Decision Aid (ADA), and the lethality code known as HITS.



THAAD M&S PROGRAM ANALYSIS

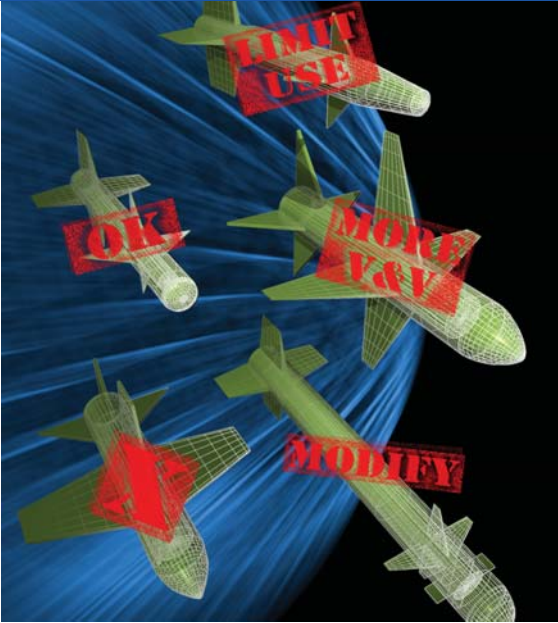
AEgis provides M&S Planning and Support to the Terminal High Altitude Area Defense (THAAD) Project Office (TPO). THAAD M&S Manager includes identification, validation, and programmatic M&S investments to ensure adherence to industry best practices, DoD approved M&S standards, Verification, Validation, and Accreditation (VV&A), and elimination of duplicate M&S efforts.



MDA SYSTEM ENGINEERING AND ANALYSIS

AEgis provides programmatic and technical support to MDA BC and participates in the Missile Defense Agency (MDA) C2BMC Communications Connectivity Task Force (CCTF).

AEgis provides communications requirements to the US Army THAAD and PATRIOT programs, the US Navy Aegis Ballistic Missile Defense (BMD) systems and MDA specific systems. AEgis provides DISA trained support personnel to MDA/BC to coordinate DISA services and the related budget requirements to meet the bandwidth and availability of DISA Long Haul DATMS circuits.

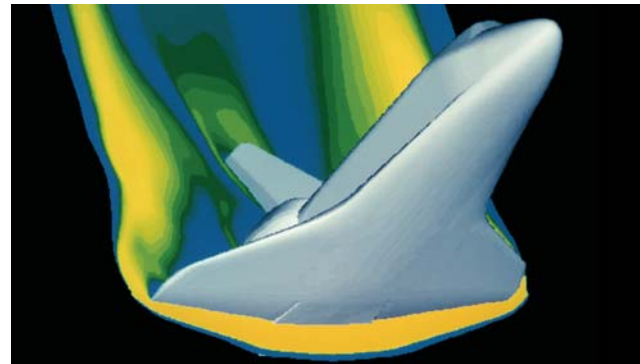


AEgis is a leader within DoD in the development of M&S VV&A strategies and execution of VV&A Plans. AEGis' Managed Investment Strategy clearly defines the supporting V&V data products, M&S Units Under Test (UUTs), associated V&V activities, agents, and resources for cost-effective VV&A program execution.

The magnitude of the M&S VV&A process depends on the criticality of the application, the availability of adequate support for the M&S application, and the extent of existing data available, which serves as a foundation for the accreditation decision. The AEGis' Managed Investment Strategy is crucial to successful program definition and execution.

NASA VV&A

AEgis supports continued development and refinement of VV&A plans and procedures and the subsequent implementation activities. Key to AEGis' maturation of its VV&A plans and processes is the capture of appropriate application-derived changes and timely feedback. AEGis also provides general systems engineering support for models and simulations (M&S), including CONOPs development, requirements management and risk management.



GMD M&S VV&A

AEgis provides personnel and resources to support the V&V of major GMD Prime T&E resources and models and simulations (M&S) and performs V&V of the Common Test and TTEC Framework (CTTF), the GMD Prime Consolidated Integration Lab (PCIL), the ISTC, and other M&S as directed by the GMD Prime Subcontract Manager. AEGis provides oversight of V&V of all GMD M&S. The evaluation and assessment of these test resources and M&S shall include studies and analyses to document the scope and results of the V&V activities.

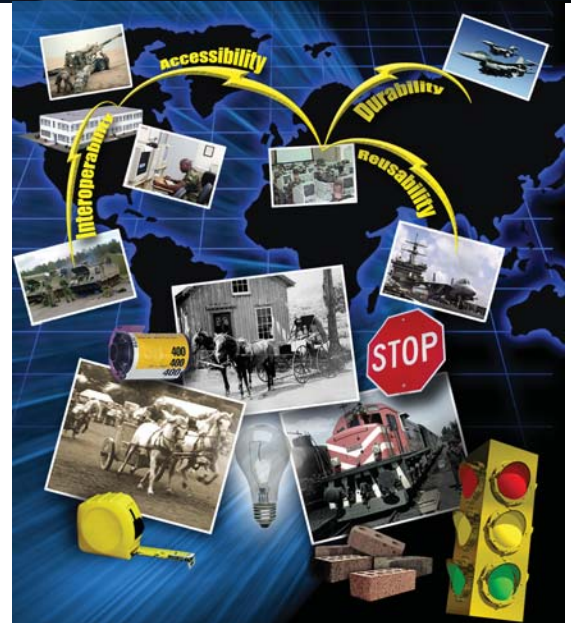


JLENS M&S VV&A

AEgis supports the Cruise Missile Defense System Project Office (CMDS PO) Joint Land Attack Cruise Missile Elevated Netted Sensor System (JLENS) product by providing technical analysis and verification, validation, and accreditation (VV&A) assessment support for JLENS models and simulations (M&S). AEGis has conducted a rigorous V&V of the respective M&S to ensure that the coded implementations accurately represent the mathematical algorithms and that proper units of measure have been used in the algorithms and code.

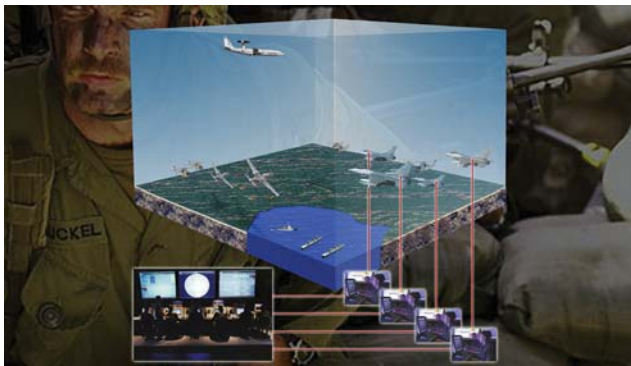


AEgis is an integral part of the invention, development, and evolution of M&S technologies and excels in applying those technologies in services for our customers. AEgis advances the use of M&S standards by supporting an effort to identify cross-discipline M&S standards priorities and address mid-term M&S standards needs. AEgis continues to advance the state-of-the-art through our advanced research and development efforts as well as our efforts to develop, advance, and evolve needed M&S technology-related standards and best practices.



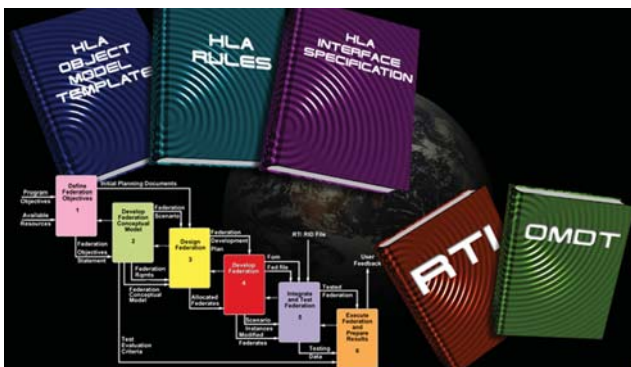
U.S. NAVY M&S STANDARDS PROGRAM

AEgis provides support to the Navy M&S Office and the Navy M&S Standards Project. AEgis personnel supports the Navy M&S Standards Steering Group (MS3G) and MS3G Technical Subgroups activities assisting in the execution of the Navy M&S Standards Evaluation Process with support to web systems that enable and facilitate the evaluation of proposed Navy M&S standards. In addition, AEgis supports M&S standards outreach and collaboration activities by participating in DoD, Joint, Service and Industry M&S Standards programs as well as actively participating in the Simulation Interoperability Standards Organization (SISO) standards activities.



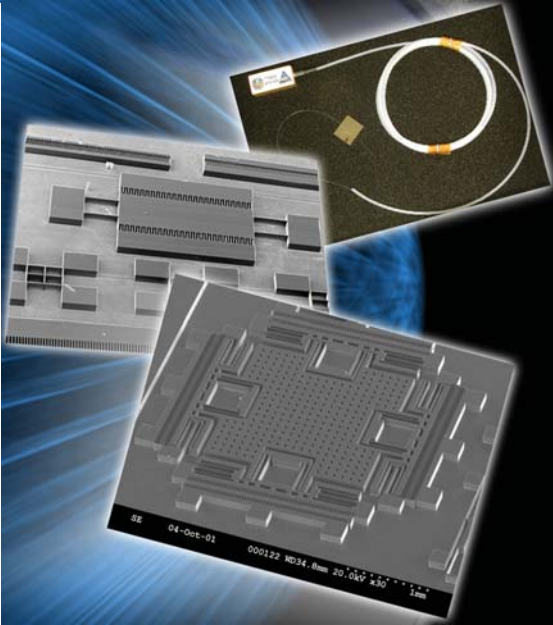
CANADIAN SECO SUPPORT

AEgis provides modeling and simulation expertise in support of the Canadian Department of National Defence (DND) Synthetic Environments Coordination Office (SECO). The SECO provides for the coordination of M&S practices and technologies across the DND. AEgis has provided support for this program via over 40 tasks providing M&S technology research and development of best practices. In addition AEgis has provided focused training on various M&S technologies. The latest efforts include in-depth research in the areas of risk in the use of M&S assets and cost and benefit factors for M&S use.



HLA SUPPORT

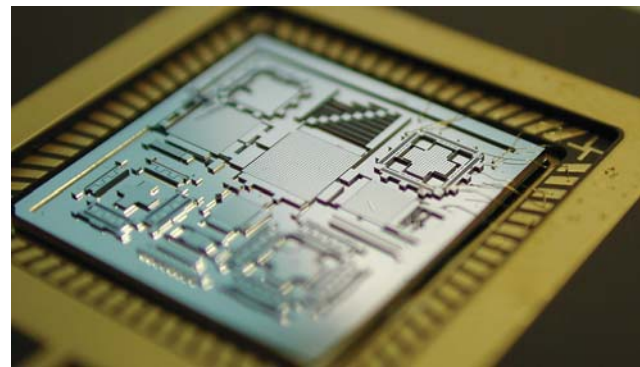
AEgis provides M&S expertise across a variety of M&S technologies research, development and dissemination programs. AEgis experts supported the development of the HLA Standards serving in multiple roles to include the Editor of the IEEE 1516 HLA Framework and Rules specification for the original specification and now the HLA-Evolved update efforts. AEgis provided HLA training for DMSO around the world, reaching over 8,000 people in six years. AEgis also supported the SERIS specifications development as well as multiple other research efforts over the years. The most recent support has been for the DMSO VV&A of M&S program and the DMSO M&S Standards program.



AEgis provides next-generation products to cutting-edge defense-related challenges in the areas of guidance and control, hardware-in-the-loop simulation, electro-optics, and advanced sensors. AEgis is an established developer of scene projectors for HWIL testing of Laser Radar and Infrared systems. AEgis has developed new fabrication and release processes that reduce sensitivity to process variations, temperature swings, and harsh environments. All MEMS devices are designed and built for missile and UAV operational environments.

MEMS DESIGN AND FABRICATION

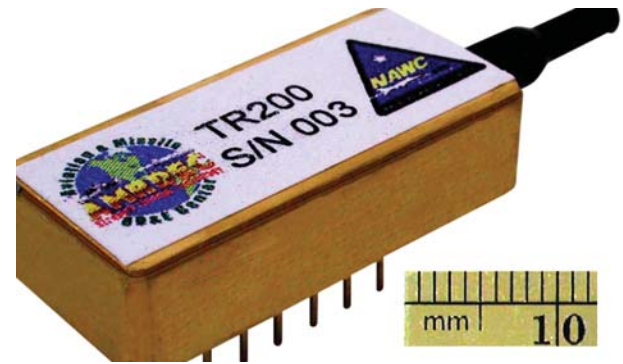
AEgis develops new MEMS components for inertial measurement units, radio frequency seekers, data links and other supporting missile components. AEgis responsibilities include process development, fabrication, integration, and packaging of device components. AEgis delivers affordable, rugged MEMS-based inertial sensors with high roll rate for use in small diameter precision-guided weapons.



MICROFLUIDICS AND PHOTONICS

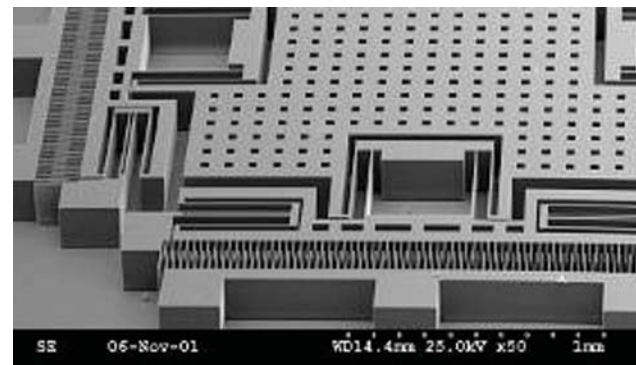
AEgis delivers numerous microfluidic devices and micron-scale polymer molds for NASA. Microfluidic test channels have been used to verify fluid flow through various geometries, and to validate micro Computational Fluid Dynamics (μ CFD) software. Microfluidic molds are used to cast miniature valves, injectors and other components.

AEgis' photonic device development for missile navigation, high-speed photonic band gap (PBG) switching and other advanced systems includes electro-optic phase modulators for gyro units providing pinpoint guidance for air-launch and surface-launch precision strike weapons systems.



NANOTECHNOLOGY

AEgis lithographic processes can be used for single molecule detection. Researchers have designed a process to repeatably fabricate wells with ~50 to ~500 nm dimensions using standard lithography anisotropic etch processes. The nanowells are characterized using scanning electrochemical spectroscopy and ion transport techniques. The goal is to integrate these single molecule traps with microfluidic sample sorting and injection channels. The microfluidic sample sorter and single molecule traps can be combined with various sensors to provide adaptable laboratory analysis for autonomous diagnostics and monitoring.





SMDC

- Ground-based Midcourse Defense User Lab Support
- Federation Architecture Framework Studies
- Missile Defense System Exerciser (MDSE) HWIL



PEO STRI

- Joint Land Component Constructive Training Capability, Entity Resolution Federation
- OneSAF Software Distribution and Training
- Project Manager, Instrumentation Targets and Threat Simulators (PM-ITTS)
- Computer Generated Forces Architecture Advisory Board (CAAB)
- Simulation to C4I Interoperability (SIMCI)
- Temperature & Irradiance Sensor Matrix (TISM)
- IMTS Upgrade



PEO MISSILES AND SPACE

- SHORAD Engineering Services, Studies and Analysis
- JLENS VV&A of JLENS Radar Models
- Cruise Missile Defense System Project Office



JOINT FORCES COMMAND (JFCOM)

- Advanced Training Technologies Laboratory
- Evolving, Enhancing, and Providing Tools, Processes and Products for the JNTC



MISSILE DEFENSE AGENCY

- International Studies
- Programmatic and Technical Support (MDA SETA)
- Missile Defense Analysis
- Support Coordination of M&S Activities (THAAD)
- Develop M&S Master Plan (THAAD)



NASA

- VV&A Plans and Procedures Development
- Systems Engineering Support
- Microfluidics & Photonics



AIR FORCE RESEARCH LABORATORY

- ADS Training System
- Directed Energy (DE) Simulation Trainer Development and Support
- Advanced Concept Experiments in DE



KINETIC KILL VEHICLE (KHILS)

- HWIL testing of infrared and electro-optical guided weapons
- Target simulation development, design, and integration
- LADAR Scene Projection



U.S. ARMY AVIATION AND MISSILE COMMAND (AMCOM)

- Army Missile HWIL Testing
- MEMS/Nanotechnology Design & Fabrication
- Precision Strike Navigator (PSN) - IFOG Design Development, Fabrication, and Integration
- Terrain Database Development
- Real-time 3D Modeling



DEFENSE MODELING AND SIMULATION OFFICE (DMSO)

- Conceptual Modeling
- HLA Training and Support
- HLA FEDEP VV&A Overlay Development
- Simulation Interoperability Documentation



AIRBORNE LASER (ABL) SPO

- Airborne Laser Modeling, Simulation & Analysis
- VV&A and Conceptual Modeling
- M&S Strategic Planning
- Exercises and Wargames
- EADSIM/MDWAR/MTSE Support
- Performance & Assessment Toolkit/Database



GROUND-BASED MIDCOURSE DEFENSE

- Joint National Integration Center SETA Support
- Modeling and Simulation Planning
- GMD M&S Verification and Validation
- GMD Modeling and Simulation Accreditation



AIR FORCE OPERATIONAL TEST EVALUATION CENTER

- OT&E Activities and Rapid Test Support
- ADS Principal Investigator for Testing
- CBRNE - Chem/Bio Research and Testing





WORLD LEADERSHIP IN MODELING AND SIMULATION



BILL WAITE
President

bwaite@AEgisTG.com

STEVE HILL
Chief Executive Officer

shill@AEgisTG.com

LANCE COOPER
Vice-President, Services Division

lcooper@AEgisTG.com

AEgis
Technologies

The AEgis Technologies Group, Inc. • 631 Discovery Drive • Huntsville, Alabama 35806
Phone: (256) 922-0802 • Fax: (256) 922-0904

www.AEgisTG.com