

Accelerating your business through collaboration

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MLIC is the catalyst for collaboration among business, government, entrepreneurs and academia; fostering innovation in maritime logistics.

The Maritime Logistics Innovation Center (MLIC) is a unique non-profit partnership of private industry, academia, including Georgia Tech and federal and state authorities such as the Georgia Ports Authority (GPA), working together to develop, apply and promote new technologies, identify unique applications for existing technology, and create best practices for safe, efficient and secure supply-chains. The Center acts as a catalyst for interaction among internationally renowned academic leaders, entrepreneurs and established businesses from around the world. MLIC is the cornerstone of Georgia's Centers of Innovation Network, launched by Georgia Governor Sonny Perdue in the fall of 2003.



Imports and exports are evenly balanced at the Port of Savannah.

Examples of the benefits of the collaborative environment MLIC provides can be seen in the various grants awarded from such agencies as the Federal Highway Administration, Department of Homeland Security, National Science Foundation and the Homeland Security Advanced Research Program Agency. Projects with these agencies include such topics as the Advanced Container Security Device, Risk Mitigation for Port Systems and Intelligent Transportation Systems. These projects, along with others, currently total over \$10 million of federal and state investment.

Core elements of the partnership

Industry driven solution development

There are essentially two clusters within the MLIC. The first consists of strategically invited industry partners that are facing the challenges and the opportunities of the maritime logistics industry. These strategic partners represent many elements of the global supply-chain process, from manufacturers and retailers to various transportation mode providers.



Container testing facility at MLIC headquarters in Savannah.

The second cluster can best be described as 'problem solvers' and is formed from a cross section of world renowned researchers from academia, leaders from the technology community, relevant industry associations, organisations as well as other 'industry experts'.

Coupling this group of creative problem solvers with industry led challenges; MLIC forms an objective 3rd party, shared 'sandbox' where academia, industry and government jointly develop the needed innovative technologies and effective solutions for the maritime and logistics industries.

Technology commercialisation

MLIC not only facilitates the conception of innovative technologies, it works to commercialise and promote them as well. MLIC members gain an exclusive first-look at research and are given licensing opportunities for new maritime technologies and innovative products. Through its Innovation Center Grant Programme, partner companies can take advantage of overhead-free matching funds to help seed research projects of interest.

Entrepreneurial outreach programme

Start-up companies in fields such as transportation, supply-chain management, information technology and security are nurtured by seasoned Entrepreneurial Outreach Specialists (EOS) who travel extensively to provide hands-on technical expertise to speed bottom-line growth.

MLIC employs an EOS to assist technology-focused entrepreneurs and small businesses throughout the State. This specialist provides on-site technical assistance and coaching, in



Civil Engineering Faculty and students at the Georgia Tech Savannah Campus.

effect creating an ‘incubator without walls’ for appropriate entrepreneurs and facilitating access to the resources of the Georgia Centers of Innovation network.

Since July 2005 the MLIC EOS has worked with over one hundred different technology based companies and entrepreneurs and assisted in starting more than four new companies. This outreach activity is a crucial part of the MLIC partnership, as it adds yet another layer of creativity and source of fresh ideas to the problems being addressed.

Joint facilities

Headquartered at Georgia Tech’s Savannah campus, the MLIC is located close to the Georgia Ports Authority, the Savannah River, two major interstates, an international airport, and many large distribution centers – making it a great resource for the maritime industry and other shipping-related businesses.

Georgia Tech has an international reputation as a leader in academic research activities, and is well-recognised for its focus on areas that have a direct impact upon the competitiveness of industry and the nation, as well as for its pioneering efforts in support of inter- and multi-disciplinary programmes. Best known for applied research, Georgia Tech was recently ranked the leading university in the nation for technology transfer, a characteristic embedded in our economic development mission.

Georgia Tech Savannah currently offers graduate programmes of advanced study and research in three areas: Civil and environmental engineering, electrical and computer engineering, and mechanical engineering. Faculty members are actively involved with industry and governmental agencies on many research projects, both on a national scale and in Southeast Georgia. They also serve as advisors to the many undergraduate and graduate students participating in a variety of research activities across the campus.

Partner driven interests

MLIC’s environment is designed to progress the momentum of strong, pioneering companies and offer them a broad background of knowledge and resources in the issues facing the maritime and logistics industries today.

One of the ways this is accomplished is through pilot projects, testing an array of potential technological solutions to actual problems in a real environment. These projects range from proof of concept demonstrations to research activities to help move an idea towards reality. The solutions come from a wide range of places including Government and University labs and from the earliest stage start-up to the largest Fortune 500 company. The projects give the maritime industry a first hand look at how different technologies perform in the complex and unique range of challenges the maritime environment introduces.



A current research interest: container security.

Example projects include: One designed to further reduce truck turn times and build a stronger communications network between a port and its users; another, monitors equipment and machinery to gauge productivity and provide constant, real-time location of containers.

In addition to projects, MLIC staff and associates are constantly focused on research and development in numerous areas of interest to its industry partners. This research helps the partners stay on top of what the technology community has to offer, and how it applies to maritime logistics operations. A sample of some of the current interests include:

- **Optical Character Recognition (OCR):** In any industry, the accurate and efficient exchange of information is very important to overall operations. The seaport environment is no exception.
- **Radio Frequency Identification (RFID):** Early, automated and continuous identification of moving assets is an ever increasingly important part of Supply Chain Management.
- **Biometrics:** Applications to outdoor access control systems. Accurate identification of the people handling and transporting cargo can be just as important as tracking the cargo itself.
- **Communication interoperability**
- **Container security:** Seals, tracking, sensor based cargo status, and non-intrusive inspection technologies.
- **Transportation Worker Identification Credential (TWIC):** Applicability to existing credentialing systems and procedures.
- **Asset visibility & position detection:** Affects on operational efficiency.
- **Simulation and modelling:** Using simulations to create tools for virtually testing the effectiveness of emerging ‘bleeding edge’ technologies.



MLIC is helping to improve the flow of traffic through the gates of GPA.

Example MLIC activity

Automated Terminal Asset Management System (ATAMS)

MLIC recently constructed a Request for Proposals (RFP) for the Georgia Ports Authority (GPA) to issue to the technology industry. The system being sought and described in this RFP is referred to as the Automated Terminal Asset Management System (ATAMS) and is comprised of four different subsystems:

- A Wireless Local Area Network (WLAN)
- An OCR system
- A RFID system
- A Position Detection System (PDS)

In the past 12 months, the Port of Savannah has handled more than 16 million tonnes of cargo, or 1.76 million Twenty Foot Equivalent Unit (TEU) steel ocean shipping containers, a growth rate of over 15% per year for several years creating an expectation of doubling the number of TEU's handled over the next five years. To stay ahead of the growth curve, the GPA is prepared to invest in systems that can increase the efficiency of the port.

For over two years, MLIC and GPA have worked together to research and observe automated gate and container tracking systems at ports around the world to determine the best existing technology and vendors that can create, integrate and maintain a semi-automated equipment and container tracking system at the GPA Garden City Terminal (GCT). By providing this system, GPA expects that employees at the port will be able to reliably and efficiently boost their production to ensure the Port of Savannah maintains a competitive edge and remains attractive to shippers.

GPA wishes to know and track the exact location and utilisation of their assets and cargo. Over the next three to five years, GPA expects to put a system in place that will identify and track containers throughout their 1,400 plus acre terminal whether they come by truck, by rail or by sea. Simultaneously, GPA will be adding substantially to their Container Handling Equipment (CHE).

ABOUT THE AUTHOR

Prior to joining MLIC, **Page Siplon** served in the United States Marine Corps and the United States Air Force, providing circuit level maintenance on various ground-to-air and ground-to-ground communication systems and integrating encryption techniques and solutions for large-scale secure voice and data communication systems.

Mr Siplon, who is originally from New York, received his Bachelor's Degree in Computer Engineering from the Georgia Institute of Technology, where he also completed a Master's Degree in Electrical and Computer Engineering focused on digital signal processing. He also received an Associate's Degree in Electronic Systems from the Air Force College, along with completing multiple military leadership academies.

ENQUIRIES

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