

Mississippi Enterprise for Technology

John C. Stennis Space Center



Volume II, Issue II

BUILDING WORKFORCE, BUILDING BUSINESS

July 2009



Board of Directors

Ernest Burdette
President Emeritus, Founder
Triton Systems

Jim Craig
*Vice President of Economic
Development*
Electric Power Association

Ed Gough, Ex-officio Director
Technical/Deputy Director
Naval Meteorology and
Oceanography Command

John Hairston
*Executive Vice President,
Chief Operating Officer*
Hancock Bank

David Mauffray
Fuel Services Manager
Mississippi Power

Les Newcomb
Executive Director
Southern Mississippi Planning
and Development District

Sidney Rushing
Retired
Hancock Bank

Joe Swaykos
Director
Center of Higher Learning

Hal Walters
Retired
Hancock County Port and
Harbor Commission

Jack Zink
Executive Director
Hancock County Port and
Harbor Commission

Copyright 2009, MsET

geospatial technologies

NVision charts course for the future

Talk about proof of concept. It was a large-scale exercise in the Seattle area in 2007 designed to test the readiness of state, local and federal authorities, including the military, in handling a disaster. The exercise was being conducted by the Navy's Center for Asymmetric Warfare.

A team from a small Mississippi company was there, brought in at the last minute by Boeing, with which it had worked on an emergency management system. But the late-comer, NVision Solutions, was not allowed to participate. They could only monitor from an exercise control center at the Port of Tacoma.

Hollywood couldn't have written a better script for what happened next.

Not long after the exercise began, the CAW digital phones used to monitor the exercise crashed, but in the control center NVision's system was still functioning, receiving reports from Boeing personnel in the field using handhelds. You can guess what came next: CAW ended up using that system to run the exercise.

As if that wasn't enough to impress, the system allowed CAW to handle two real emergencies during the exercise: Getting help to a dock-



Photo courtesy NVision Solutions

FROM LEFT: NVision's Mark Stevens, Justin Bates and Kevin Bupp work with the 42-inch, multi-touch computer table used in the HazNet system.

worker who received lacerations to the hand, and responding to a minor chemical spill at one of the port terminals. The result? CAW invited Boeing and NVision back the next year to handle exercise control, and they're going back again in September.

NVision Solutions, which focuses on geospatial applications, was founded in 2002 with three employees. It took up residence as a tenant at the Mississippi Enterprise for Technology, an incubator/technology transfer office at John C. Stennis Space Center, Miss. A lot has happened since those early days.

NVision Solutions now has 54 workers and is one of the first tenants at the Stennis Technology Park, outside the space center along Interstate 10, not far from Stennis International Airport. For a small company that worked out of one room, it now occupies the entire third floor at the Bay Pointe Building and maintains an office at Stennis Space Center as well.

The company has a list of awards that's impressive by any measure: 2009 Mississippi Company to Watch, ESRI's 2009 Business Partner of the Year, Silver Phantom Award from the Boeing Co,

(NVision Continued on page 2)



(NVision Continued from page 1)

NASA's Top 20 Innovative Partner Program participants, and more.

Charlie Beasley, president and CEO of MsET, said NVision is a good incubator model.

"It justifies the plan we had to assist entrepreneurs and early stage companies, and to move them from a startup to a successful, mature business," he said.

Beasley said the company has taken all the right steps, and others should learn from NVision's success.

Craig Harvey, chief operating officer and one of the founders, said he knew it was the right company at the right time in the right field, and some good strategic moves got the company to where it is today.

HazNet project

The hot thing right now at NVision is the All-Hazards Network, or HazNet, which uses tools created by the federal government to help communities with planning, response and recovery from disasters. NVision said it came up with the idea in 2003, two years before Hurricane Katrina. It uses a system of maps, aerial photos, databases and information from sensors that lets first responders monitor conditions and activities in real time.

During a disaster, that kind of information is crucial.

NASA was intrigued and provided matching funding through its technology transfer office to St. Tammany Parish, La., for a Web-based system called the "Real-Time Emergency Action Coordination Tool," or REACT. The system would combine NASA earth science research with commercial technology to help parish officials respond to inland and coastal flooding, as well as deal with reporting required for federal assistance. The system was in use when Hurricane Ivan struck in 2004.

The system monitors flooding by watching USGS stream gauges, along with an additional 12 gauges developed by NVision and 2004 MsET incubator graduate Omni Technologies of Slidell, La. It can be seen as a sort of early warning system. If any water-level reading passes a danger threshold of depth, or rate of rise, an alert is e-mailed by REACT with a link to a map and report of



the estimated impact of the inundation. The system queries an associated database that includes census data, fair-market value of homes, and other information that allows a damage assessment for the flooding.

NASA and St. Tammany eventually expanded the system to include tracking information about response resources – including the location of vehicles, first responders, and the vacancy and capacity of beds at local hospitals. NVision and Omni Technologies again teamed up to create the low-cost vehicle tracking devices.

Hurricane Katrina

When Hurricane Katrina pounded the Gulf Coast in 2005, NVision volunteered its services at the temporary Hancock County Emergency Operations Center and began mapping every aspect of the response and relief effort and handing maps to responders and volunteers. Maps ranged from navigational aids to the changing locations of relief centers, as well as a variety of damage assessment map products.

FEMA recruited NVision to set up a similar mapping center at its Planning Department in Biloxi, where four NVision geographers and programmers have been assigned ever since. FEMA also contracted with NVision to remain in the Hancock County EOC for an additional 18 months after Katrina. It produced over 230,000 maps in the year and half after Katrina.

In 2006, NVision partnered with Boeing Phantom Works of Kent, Wash., which had been developing an emergency management application for mobile devices that happened to be compatible with HazNet. After some integra-

tion work, the NVision-Boeing team debuted the combined system at the Seattle exercise in 2007.

During the 2008 hurricane season, NVision again worked in the Hancock County EOC for Hurricanes Gustav and Ike. Boeing sent a box of the HazNet mobile PDA phones from Seattle for the team to use. NVision used the HazNet system to record roads flooded during the storm, and the day after Gustav, NVision staff rode with four building inspectors around the county to do damage assessments.

The HazNet Mobile phones sent pictures of damaged buildings and notes from inspectors from around the county as they were recorded, allowing the team to finish the assessment in one day rather than the four days planned.

NASA interest

In 2009, NASA decided to buy HazNet for headquarters in Washington, D.C., and the two NASA facilities affected by Hurricane Katrina – Stennis Space Center and the Michoud Assembly Facility in New Orleans.

The HazNet system was installed in the new 78,688-square-foot Stennis Emergency Operations Center that opened June 2. The EOC is one of only nine federal facilities certified Storm-Ready by the National Weather Service. Among its features is an underground communication system with the state capital in Jackson, assuring a communications pipeline to the north should systems be disrupted to the south.

But the EOC is also a showcase for yet another interesting twist to HazNet. The system sports a 42-inch, multi-touch computer table made by NVision in Hancock County – the first of its kind in the United States. NVision licensed the design for the Intuiface touch table from the French company Intuilab. It uses a rear-projection screen that makes it up to 50 percent less expensive than most table computers, according to NVision. It also allows multiple users to touch it at the same time, a clear benefit when a group dealing with a disaster is gathered together.

NASA is now considering the system for a one-year pilot program for NASA facilities nationwide.

– David Tortorano



The MsET story



Tortorano Publications photo

It could be considered the granddaddy of Mississippi’s geospatial technologies effort.

The Mississippi Enterprise for Technology Inc. at John C. Stennis Space Center is a nonprofit created in 1994 as a business incubator and technology transfer office. The joint effort of the Mississippi Development Authority, NASA and the state’s universities was designed to spawn the development of high-wage, high-skill technology jobs.

MsET evolved into one of the first state groups to focus on leveraging the presence of federal geospatial activities, no small matter considering it’s a key technology of the 21st century.

Geotechnology is the gathering, interpretation and distribution of geographic data gathered with satellites and aircraft to provide a picture of the world. It involves several disciplines and was once the purview of government. But now commercial companies are big players with products and services evolving rapidly.

The beginning

The state’s interest in leveraging federal technologies at Stennis – then called the Mississippi Test Facility – began in 1964 with creation of the Mississippi Research and Development Center. State officials knew they had a jewel in the facility designed to test rockets for NASA.

In 1970 NASA located its Earth Re-

sources Laboratory to MTF to find applications for data acquired from remote sensing equipment. At NASA’s invitation, the departments of Commerce, Interior, Transportation, Army, Navy and EPA later set up operations at the facility that would eventually be renamed Stennis Space Center.

In 1994 MsET was established to support the role first envisioned 30 years earlier: leveraging the research, development, test and evaluation taking place at Stennis Space Center.

That it wound up involved so deeply in geospatial activities was simply because geospatial technologies had become key at SSC. Three years after MsET was established Congress passed legislation to commercialize geospatial technology. The same year Stennis was designated NASA’s lead center for implementing commercial remote sensing.

In 1998 Mississippi formally began its effort to create a geospatial technology cluster with establishment of the Mississippi Space Commerce Initiative, which in 2003 became the Enterprise for Innovative Geospatial Solutions.

MsET today

MsET is headquartered in the 56,000-square-foot Mississippi Technology Transfer Center, designated the Center of Excellence in Geospatial Technologies. Building 1103 is also occupied by universities, nonprofits and commercial companies. MsET

also has space in Building 1210 for a total of 25,000 square feet.

Its mission is to provide an environment where start-ups can turn technologies into products and services through serving as an incubator and technology transfer office.

As a technology transfer office, MsET is a clearinghouse where research at SSC, whether from federal or state labs, can be converted into products and services for the general public.

As a business incubator, MsET is a member of the National Business Incubator Association and provides an environment where start-ups stand a better chance at surviving through providing business and technology-related services, opportunities for joint ventures, entrepreneur training and access to state/federal technology portfolios.

MsET works with a statewide network of offices to offer technology forecasts, business plans, market research, sources of financing/marketing strategies, patent searches and vendor sources.

MsET does not limit itself to a particular type of technology, and the current list of tenants includes companies involved in everything from software development to computer security systems. Long-range plans call for exploring the growth of alternative technology areas.

But its emphasis on geospatial activities at SSC makes MsET a unique organization in the state and an engine for future growth.



Demographics

The John C. Stennis Space Center is a key location for three of five science and technology sectors likely to play a growing role in South Mississippi's future.



South Mississippi science & technology sectors

Sector	Primary centers
Aerospace	Stennis Space Center; Moss Point
Advanced materials	Hattiesburg; Bay St. Louis; Gulfport
Shipbuilding	Gulfport; Pascagoula
Geospatial technologies	Stennis Space Center, Ocean Springs
Marine science	Stennis Space Center, Ocean Springs

Source: Mississippi Gulf Coast Alliance for Economic Development/Tcp

Stennis tenant MsET is heavily though not exclusively involved in geospatial technologies.

Current MsET residents

Company	Field
3 Rivers Visual Communications	Business services
3001 Inc.	Aerial imagery
Avery Island Technologies	Systems integration
DQSI Corporation	GIS support
DigitalGlobe	Imagery products
Digital Quest	Education products
DNet	Geoinformatics
Geocent	Geospatial
Helios Systems	Digital media
High Performance Solutions	IT support
Innovative Imaging and Research Corp.	Illumination; agr.
Institute for Technology Development (ITD)	Imaging
Melhcorp	UAV products
Mississippi Global Technologies	Navigation; security
Motex Corporation/CORE-ECS	Assurance info
Northrop Grumman Information Technology	Emergency mgmt
Prototyping Solutions	3D printing
Radiance Technologies	Geospatial
Rockwell Collins	Geospatial; UAV
Skylla Engineering	Engineering
Themis Vision Systems	Imaging
WorldWinds	Weather modeling

Source: MsET

MsET tenant residency

Pearl River County	27%
St. Tammany Parish	21%
Hancock County	17%
Harrison County	15%
Other Louisiana parishes	13%
Other Mississippi counties	8%

MsET tenant education

Bachelors	44%
High school	30%
Masters	18%
Associates	6%
PhD	1%

MsET Profile

Most MsET tenant workers live in Mississippi, but 34% are from Louisiana. Sixty-nine percent of the workers have college degrees. Source: MsET

South Mississippi federal/state geospatial research

Organization	Location
Center of Higher Learning/University Research (Consortium)	Stennis
Engineering Research Center - GeoResources Institute (MSU)	Stennis
Engineering & Science Directorate (NASA)	Stennis
Enterprise for Innovative Geospatial Solutions (UM)	Stennis, Oxford, Jackson
Gulf Coast Geospatial Center (USM)	Ocean Springs
Hydrographic Science Research Center (USM)	Stennis
Joint Airborne Lidar Bathymetry Technical Center (NOAA)	Kiln
Mississippi Enterprise for Technology (Mississippi)	Stennis
Mississippi Laboratory/Southeast Fisheries Science Center (NOAA)	Stennis
Mississippi Laboratory, Pascagoula Facility (NOAA)	Pascagoula
National Data Buoy Center (NOAA)	Stennis
Naval Oceanographic Office (Navy)	Stennis
Naval Research Laboratory, Research Site (Navy)	Stennis
Northern Gulf Institute (Consortium)	Stennis

Source: Mississippi Gulf Coast Alliance for Economic Development/Tcp