



## Malay Voted President-Elect of American Meteorological Society

**J**onathan T. Malay, director of civil space and environment programs at Lockheed Martin Washington Operations, was elected 2010 president-elect of the American Meteorological Society (AMS) by the organization's membership. "I'm both humbled and incredibly honored to have been elected for AMS President-elect," Malay stated, "and I thank my colleagues very much for your trust in me. I will do my very best to serve the AMS membership in fulfilling my role as your president."



In his bid for the post, Malay outlined his position on important topics for the AMS members by responding to the Society's question: "What do you see as the challenges facing the Society, and how would you address them if elected?" Here is his response:

► *"We have a collective responsibility to do whatever we can to ensure that policy decisions are based on sound science and reasoned judgment."*

"This is an exciting and extremely important time for the AMS and our members. The U.S.-led creation of the Group on Earth Observations and the Global Earth Observing System of Systems (GEOSS) were very important initiatives, and the framework they can provide for international cooperation is truly exciting. However, U.S. participation in GEOSS has also been badly limited by sparse new investments in both Earth observations and an integrated information technology infrastructure that would enable us to

achieve the noble societal benefit goals that were set. While our National Weather Service and private sector meteorological capabilities provide strong leadership for the global weather enterprise, we have simply not been making the investments that are needed to become what had been conceived as an Integrated Earth Observing System (IEOS) for climate and Earth systems, including weather, oceans, Cryosphere, solid earth geophysics, land use and space weather.

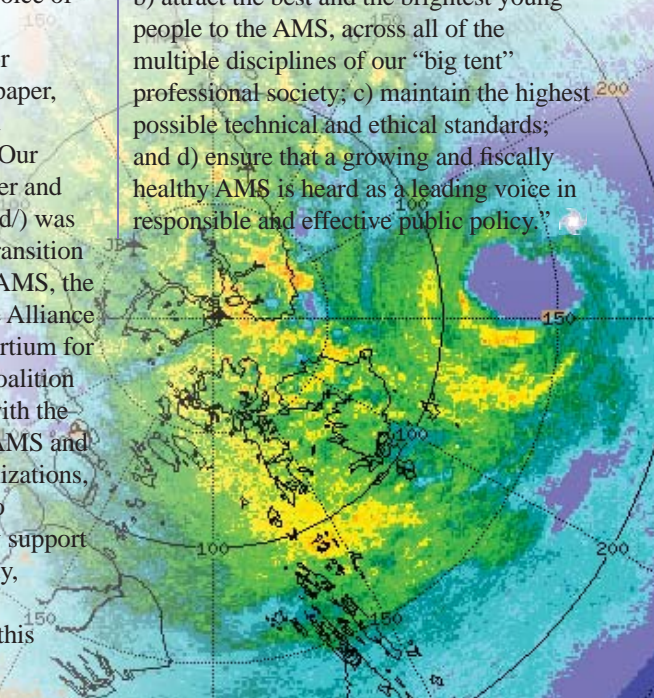
"Today, we are definitely at a turning point, with a U.S. president, senior executives in his administration, and Congress, all of whom appear to be science-friendly and very concerned about energy, the environment and climate change. We in the AMS have a collective responsibility to do whatever we can to ensure that policy decisions are based on sound science and reasoned judgment. The economic consequences of the actions taken by the U.S. government and all governments around the world will have enormous consequences—good and very, very bad. What stands between these two extremes is the effectiveness of the educated and technically correct voice of the AMS community.

"The University Corporation for Atmospheric Research-led white paper, 'Advice to the Administration and Congress: Take Actions To Make Our Nation Resilient To Severe Weather and Climate Change' ([www.ucar.edu/td/](http://www.ucar.edu/td/)) was delivered to President Obama's Transition Team with the full support of the AMS, the American Geophysical Union, the Alliance for Earth Observations, the Consortium for Ocean Leadership, the Weather Coalition and other groups. This, together with the existing policy statements of the AMS and other reputable professional organizations, needs to be skillfully articulated to decision makers and to effectively support the National Academies' new study, 'America's Climate Choices.'

"What do I personally bring to this

challenge? Those who know me know I have passion for doing what's right and the leadership skills and energy to get things done. But in the course of my 36-year professional career, I've also been an operational user of environmental support services, a practicing meteorologist, a research oceanographer, a government program manager, an industry representative to NOAA and NASA, and a leading voice in the Washington community. In each of these roles I fought for responsible government, informed decision making, and a collaborative public/private/academia partnership for the weather community.

"My goals are to bring these experiences, talents, and the best professional network in my industry to work closely with the distinguished members of the Council and my colleagues on the AMS professional staff to: a) serve our ever more diverse, highly educated, and richly experienced membership in advancing their careers; b) attract the best and the brightest young people to the AMS, across all of the multiple disciplines of our "big tent" professional society; c) maintain the highest possible technical and ethical standards; and d) ensure that a growing and fiscally healthy AMS is heard as a leading voice in responsible and effective public policy."

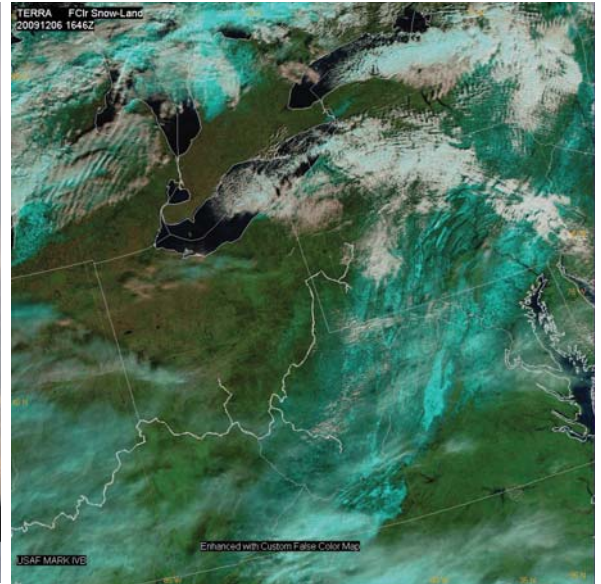


## MARK IVB Team Completes First Install of New X-Band System

**T**he Lockheed Martin Integrated Systems & Global Services (IS&GS) - Defense

MARK IVB team completed the first installation of the new X-Band system at Elmendorf Air Force Base, Alaska, in early December. MARK IVB is under contract with the Air Force (SMC SLG/WML) to develop, integrate, test and deploy this solution which will collect, process and provide Moderate Resolution Imaging Spectroradiometer (MODIS) data from NASA's Aqua and Terra Earth Observing System satellites and high-resolution data from Europe's METOP polar-orbiting satellite.

The effort includes acquisition and integration of hardware and government-furnished software necessary to receive and process X-band broadcasts. The directive also calls for modifying MARK IVB software to store and provide data to the Air Force Weather Agency (AFWA) and MARK IVB client users, updating system drawings, technical orders, and the development and execution of test plans and deployment plans. Seven



(Left) The new 3-meter X-Band satellite receiver dish at Elmendorf Air Force Base, Alaska, shielded from the elements by its protective dome. (Right) MARK IVB, Terra satellite imagery with snow-land multi-spectral imagery algorithm.

systems have been procured with options to procure additional units.

In addition to retrofitting the current MARK IVB systems deployed globally, the team will also install a system in the critical U.S. Central Command (CENTCOM) theatre. The new capability will capture higher spatial and spectral resolution MODIS imager data

and additional meteorological satellite sensor data to support national and tactical operations. The MODIS data will initially provide the 36-channel, 1 km resolution and 7-channel, 500-meter resolution granules, and will migrate to tailored granules at native resolution. Most of the deployment and installation of this new capability is scheduled to be completed during 2010. ↻

## Lockheed Martin Partners With MIT on Climate Change Research

**L**ockheed Martin and MIT announced a major research partnership to transform how the world combats climate change and produces and consumes energy. The centerpiece of the collaboration will focus on global climate initiatives, such as carbon modeling and verification and utility-scale energy storage.

With an investment of \$5 million over five years, Lockheed Martin has become a Sustaining Member of the MIT Energy Initiative (MITEI), supporting a portfolio of diverse, high-impact energy research projects and education at the Institute. Lockheed Martin will direct a majority of its annual contribution to targeted research projects in the areas of climate change, alternative energies, as well as energy storage and management.

“As a global security company, we recognize the economic and strategic

challenges posed by a dependence on foreign oil, the potential destabilizing effect of global climate change, and the vulnerability of our nation’s aging power grid,” said Dr. Ray O. Johnson, Senior Vice President and Chief Technology Officer of Lockheed Martin. “This investment provides opportunities for industry and academia to partner to develop clean, secure, and smart energy – supporting national security, a strong economic future, and climate protection for future generations.”

“This new partnership with Lockheed Martin promises significant progress in how the world produces and consumes energy. We appreciate the company’s confidence in MIT faculty and researchers, and look forward to working together to help meet the world’s pressing energy challenges,”



said MIT President Susan Hockfield.

In addition to the focused, collaborative research, Lockheed Martin will also support MITEI’s Energy Research Seed Fund program to support innovative early-stage research projects addressing energy and related environmental issues. In addition, the Corporation will support two Energy Fellows at the Institute for each year of its five-year commitment.

Lockheed Martin is working with its customers to address the nation’s energy and climate challenges in the areas of energy efficiency, management, next-generation alternative energy generation, and climate monitoring. The Corporation provides a full range of energy solutions to the government and regulated industry, including the Department of Energy, Environmental Protection Agency, state and regional energy organizations, utilities, and businesses. ↻

## EPA Recognizes Lockheed Martin as a Top Green Power Purchaser

The U.S. Environmental Protection Agency (EPA) recognized Lockheed Martin as one of the country's top green power purchasers. The corporation is a member of the EPA's Green Power Partnership.

In the EPA's mid-2009 Top Partner Rankings, Lockheed Martin ranked 17th on the agency's Fortune 500 Challenge List and 35th on its National Top 50 List, which is comprised of the top green power purchasers from industry, government, and colleges and universities.

In 2009, Lockheed Martin purchased more than 98 million kilowatt-hours (kwh) of green power, which represents 5 percent of the corporation's total electricity usage. According to EPA calculations, Lockheed Martin's green power purchase

is the equivalent of purchasing enough electricity to power nearly 9,768 average American homes annually or the equivalent of avoiding the carbon dioxide (CO<sub>2</sub>) emissions of nearly 12,898 passenger vehicles per year.

The EPA's Green Power Partnership is a voluntary program that encourages organizations to buy green power as a way to reduce the environmental impacts associated with purchased electricity use. The partnership currently has hundreds of partner organizations voluntarily purchasing billions of kilowatt-hours of green power annually. The

combined purchases from the National Top 50 List amount to nearly 12.3 billion kwh annually.

"It is an honor to be recognized by the EPA for our partnership," said Dr. David Constable, vice president, Lockheed Martin Energy, Environment, Safety & Health.

"Lockheed Martin's purchase of green power is an important component of a corporate energy strategy that also includes lowering energy demand and reducing emissions.

Our energy strategy is a critical piece of

*Continued on Page 4, "EPA"*



## SUVI Passes Critical Design Review for GOES-R Mission

The Lockheed Martin team, awarded a contract by NASA in 2007 to design and build the agency's Solar Ultraviolet Imager (SUVI) for the Geostationary Operational Environmental Satellite (GOES)-R Series, met the requirements of the instrument's recent Critical Design Review. The review was conducted in December at the Lockheed Martin Space Systems Advanced Technology Center (ATC) in Palo Alto by a group of multi-disciplinary experts from NASA and NOAA, as well as a number of independent reviewers. The SUVI instrument will be built at the ATC under the management of the company's Sensing & Exploration Systems organization.

The Lockheed Martin SUVI instrument meets and exceeds all performance requirements. The design provides more than six times the required pixels (picture elements) and imaging cadence capability at more than three times the original specification. The SUVI program will now proceed to fabrication of the flight units. The next major review will be the Pre-Environmental Review in November 2011. The team is on track for instrument delivery in October 2012, with six months

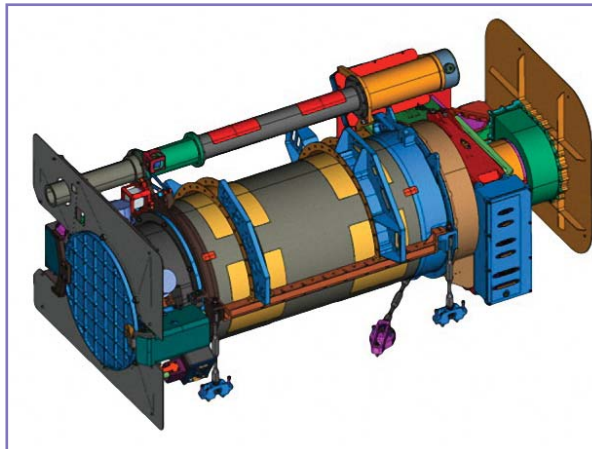
of schedule margin to meet that date. The first GOES-R launch is scheduled for 2015.

"As a team we are honored to have surpassed this important milestone in the design and construction of SUVI," said Mons Morrison, Lockheed Martin SUVI

a diverse set of operational instruments that will provide the required solar observational capabilities that enable NOAA to monitor solar activity and to issue accurate real-time alerts when space weather may possibly affect the performance and reliability of space-

borne and ground-based technological systems and human endeavors. Space weather can disrupt satellite operations, communications, navigation, and the distribution of electricity through power grids. These can lead to economic losses and can potentially endanger human life.

Operational since 1975 and managed by NOAA, the GOES program is a key element in National Weather Service (NWS) operations, providing a continuous stream of environmental information (weather imagery and sounding data) used to support weather forecasting, severe-storm tracking, and meteorological research. Along with weather forecasting, the GOES program also provides data to support space weather forecasting, safety, protection of property, and ultimately, economic health and development. The future GOES-R mission is expected to improve the quality and timeliness of forecasts, expanding the safety and economic security of the public. ↻



*A diagram of the SUVI.*

program manager. "We look forward to continuing our collaboration with NASA and NOAA to produce the best possible suite of instruments that will make these crucial measurements, and to working side by side with our Lockheed Martin colleagues who will design and build the GOES-R spacecraft."

The SUVI on the GOES-R satellites is

## WindTracer® Data Enables Flight Change Rules At Five U.S. Airports

The U.S. Federal Aviation Administration (FAA) last year approved a national Flight Rules change for aircraft separation based on WindTracer-provided data as part of the FAA Wake Turbulence Research Program for Closely Spaced Parallel Runways (CSPR).

As a result of the study, performed at the Lambert-St. Louis International Airport, the FAA will soon allow large or small-class aircraft to land with a reduced spacing of 1.5 nautical miles to the leading large aircraft when landing on CSPRs with less than 2,500-foot separation. Current separation rules require that planes arriving on two such CSPRs be spaced as if they were using a single runway.

This reduced separation will be implemented at five major U.S. airports with CSPRs, including St. Louis, Philadelphia International Airport, Seattle Tacoma International Airport, Boston Logan International Airport and Cleveland Hopkins Airport. Each of these airports must still accomplish additional requirements prior to implementing this Flight Rules change. Ongoing efforts at these airports are expanding the CSPR capacity improvements to assess the departure phase of flight, and under what weather conditions departure spacing can be reduced.

“WindTracer monitors the approaches to runways and collects data on wake turbulence created by landing aircraft under various weather conditions,” said Dr. Stephen Hannon, Environmental Sensing director for Lockheed Martin Coherent Technologies. “The research program evaluated the potential capacity improvements by safely reducing



*The WindTracer at the St. Louis-Lambert International Airport.*

separations between aircraft arriving on parallel runways. The results from the study show there are significant capacity benefits associated with the new rule that can be achieved with the existing runway infrastructure.”

In international news, the Japanese Meteorological Agency awarded Lockheed Martin a contract to install WindTracer at two additional sites in Japan. Currently, WindTracer systems are operating at the Haneda Tokyo International Airport and Narita New Tokyo International Airport.

This latest contract, the largest WindTracer contract to date and the first

multi-system sale, puts a second system at the Haneda airport and establishes the first system at the Kansai International Airport, located on an island in Osaka Bay.

In other WindTracer news, the FAA-owned system at the Las Vegas McCarran International Airport was relocated to a new permanent site. This move was the culmination of more than a year of design work and planning. Placed on a 17-foot tall supporting structure located on top of the main parking garage, the WindTracer scanner has a nearly unobstructed 360-degree view of the entire airport from its perch 140 feet above ground. ↻

### **EPA** *(continued from page 3)*

our overall efforts to build sustainable business practices across Lockheed Martin.”

Lockheed Martin’s Go Green program supports the corporation’s business strategies, its commitment to being a responsible corporate citizen, and its customers’ conservation objectives. With a goal to reduce energy use by 25 percent by 2012, Lockheed Martin continually looks for new ways to reduce its energy usage and to lower greenhouse gas emissions.

Currently, the corporation is reducing its energy usage by building and operating greener, more-efficient buildings, embarking on Green IT activities, constructing on-site renewable energy

projects, and purchasing renewable energy credits. Green power purchasing is an integral component of Lockheed Martin’s overall greenhouse gas reduction strategy.

In addition to reducing its own environmental impact, Lockheed Martin is working with its customers to address the nation’s energy and climate challenges in the areas of energy efficiency, management, next-generation alternative energy generation, and climate monitoring. The Corporation provides a full range of energy solutions to the government and regulated industry, including the Department of Energy, state and regional energy organizations, utilities and businesses. ↻

### **The Monitor**

Editor: Ken Casarsa

Lockheed Martin MS2  
P.O. Box 4840  
Syracuse, NY 13221-4840  
(315) 456-4024  
FAX: (315) 456-0439

Send address changes or additions to  
Bryce Ford, [bryce.ford@lmco.com](mailto:bryce.ford@lmco.com)

Visit [www.lockheedmartin.com/ms2](http://www.lockheedmartin.com/ms2) to see  
the complete archive of *Monitor* issues.

©2010 Lockheed Martin Corporation  
*Monitor* is a registered trademark of Lockheed Martin