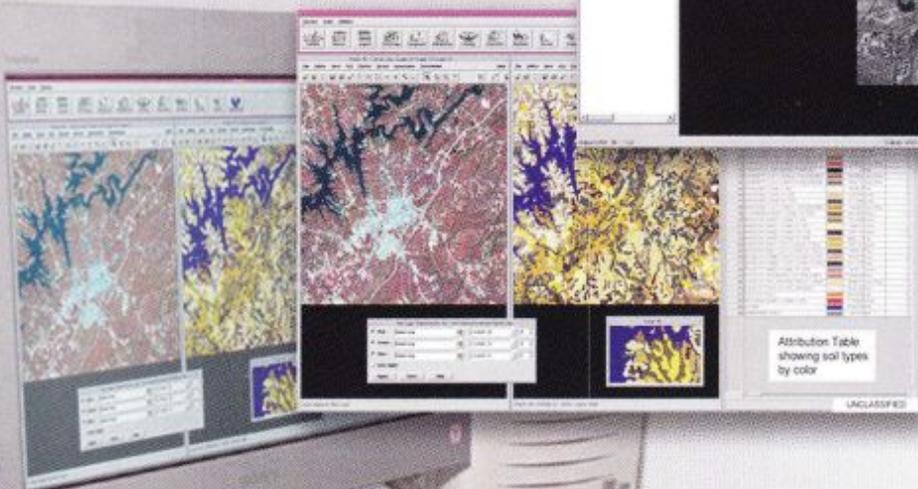
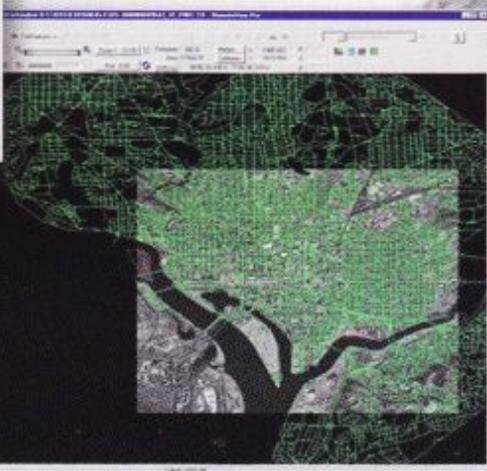
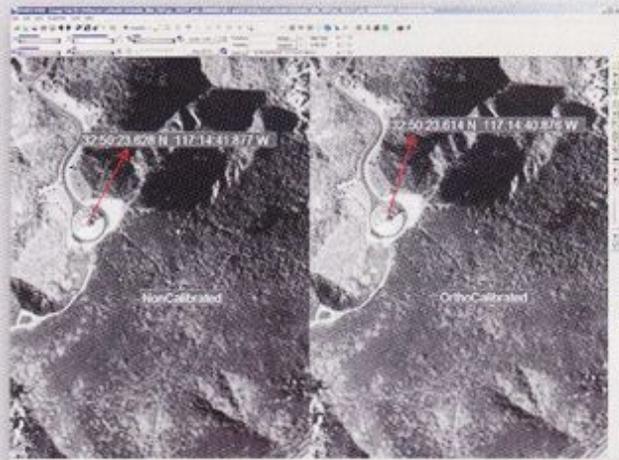


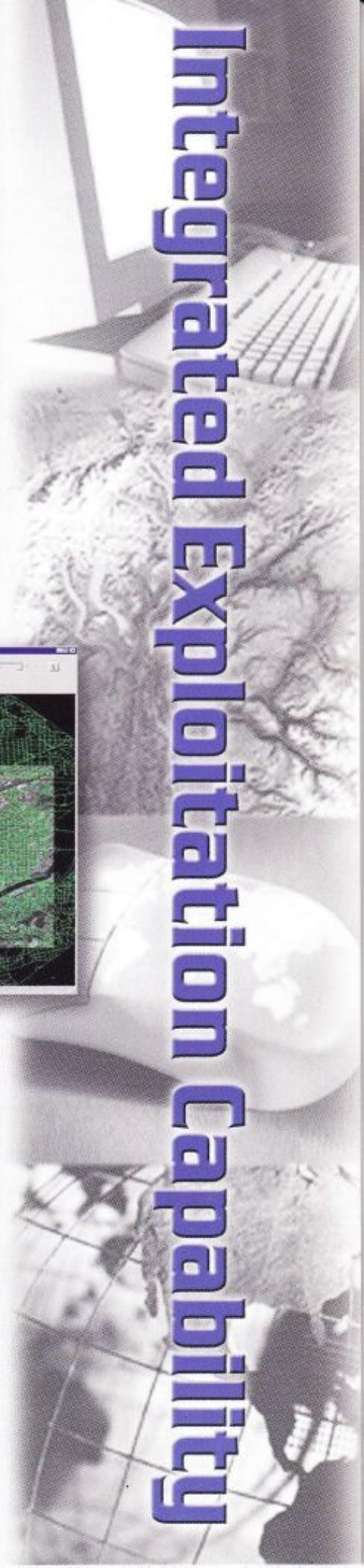
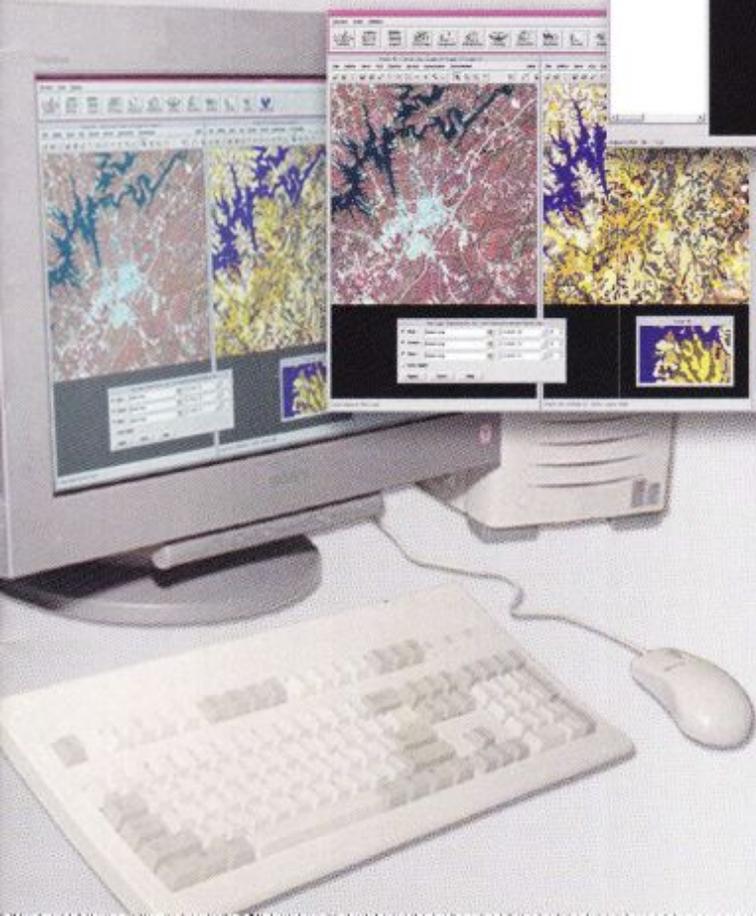
NATIONAL IMAGERY AND MAPPING AGENCY

EDGE

KNOW THE EARTH...SHOW THE WAY
AUGUST 2002



Integrated Exploitation Capability



EDGE

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On the Cover

Already tested in war, NIMA's Integrated Exploitation Capability (IEC) is the Agency's first large information system based on commercial hardware and software. The IEC captures and demonstrates the benefits of merging imagery and geospatial technologies. It gives geospatial intelligence analysts the capability to perform their specific organizational missions on a single workstation. Laura Bundy designed the cover. The story begins on page 10.

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ON MY MIND...

Senior Personnel Changes

Ms. Isham and I recently announced a series of senior management appointments. I thought I might briefly review them, and use this round of key personnel assignments to explain the philosophy we have about such moves.

Two key events occurred almost simultaneously, which prompted us to make these moves. One of these events was the return to CIA of Scott White to serve as the Associate Deputy Director of Intelligence. While this was an unexpected loss for us, we should take great pride in knowing that the Director of Central Intelligence felt compelled to reach out beyond the CIA to fill this key position. It is a compliment both to Scott and what he has accomplished here, as well as to NIMA, for the recognition we get as well.

The other "event" that contributes to the moves is the early results of the National System for Geospatial Intelligence (NSGI) Enterprise Transformation Integrated Product Team (NETIPT). We put together a group of 40 or 50 of some of our best thinkers, to come up with a game plan for the next level of detail for our transformation. Dr. Bobby Laurine and Mr. Lloyd Rowland headed up this IPT; we are very gratified at its results.

So, as a result of all this, we moved Mr. Tom Coghlan from the ExCom position of Business Executive to replace Scott as Director of Analysis and Production. Since Bobby and Lloyd have done such a superb job leading the IPT, we moved them to the Business Executive position, as principal and deputy, respectively. They will lead and coordinate our transformation efforts, as laid out by the IPT, "horizontally" across the staff. Mark Schultz, formerly the Deputy Director of Analysis and Production, moves to the InnoVision Directorate, as the Deputy. Replacing him, we are pleased to report, will be Ms. Kate Hall, a highly capable and broadly experienced CIA officer; Kate will be joining us in September, after completing her very successful tour as the DCI Representative to U.S. Space Command.

While we were at it, we decided we could create greater center-of-mass to

"operationalize" the transformation to our infrastructure if we combined the Office of Business Transformation (OBT) with the Directorate of Information Services (IS). Accordingly, Dr. Roy Combs serves as the Director, with Scott Cragg as the Deputy of this combined organization, the Enterprise Transformation Directorate (ET). Scott retains his position as the Chief Information Officer. This will combine policy setting with the institutional wherewithal to implement the policies.

Similarly, with our growing geospatial intelligence community-wide functional management responsibilities, we decided to stand up the Office of Geospatial-Intelligence Management (OGM), to bring together segments of the staff—which were supporting various aspects of functional management—into one organization. Mr. Fred Faithful heads this office, with Ms. Michele Williams as his Deputy.

Such a series of senior leader moves always elicits a lot of interest; people in the organization typically seek to "read the tea leaves" to divine the meaning. In an effort to lessen the rumor mill, I thought it might be useful to explain the underlying philosophy of managing this way. It is our view that our seniors are—or should be—above all, corporate officers of NIMA at large. That is, they should be pursuing what is best for NIMA, its mission accomplishment and its people, regardless of which position they happen to occupy at the time. We want to have a cadre of seniors (and groom those below the same way) who can step in and fill virtually any senior position in the Agency. We want to foster professional growth and development so that we have several potential candidates to pick from for the Deputy Director or Director positions, or, alternatively, for senior positions elsewhere in the intelligence community.

And, placing the highest premium on our seniors as corporate officers fosters teamwork. In the end, we are all simply temporary stewards of these positions; none of these positions are personal possessions. The greater calling should always be to the Agency at large—its

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Joint Chiefs Chairman Visits NIMA, Praises Efforts against Terrorism

By Muridith Winder

The Chairman of the Joint Chiefs of Staff made his first visit to NIMA June 24 and had nothing but praise for the work force. "Clearly, NIMA is very involved in everything we do in this country when it comes to national security," said Air Force Gen. Richard B. Myers. "The work you're doing is absolutely superb."

NIMA Director retired Air Force Lt. Gen. James R. Clapper Jr. greeted the chairman at Erskine Hall in Bethesda. They then attended briefings that included NIMA Deputy Director Joanne O. Isham and other senior leaders. The Chairman's visit focused on NIMA's transformation and work in the war on terrorism.

In dealing with post-Sept. 11 events and tensions in the Middle East, Myers noted that NIMA's role is changing. "There have been big budget increases to NIMA's work," he said. "More has been thought about, and there's been some increase in manpower as well. So as we try



Photo by Larry Franklin

The Chairman of the Joint Chiefs of Staff Air Force Gen. Richard B. Myers meets with NIMA Director retired Lt. Gen. James R. Clapper Jr. during his visit to NIMA. At left is NIMA Deputy Director Joanne O. Isham.

to restructure ourselves to become more adept at taking on the 21st Century threat, NIMA is right in the heart of that."

The Chairman is a command pilot with more than 4,100 hours in various aircraft, including 600 combat hours in the F-4. He's used flight information from NIMA's legacy organizations, and still uses NIMA products today.

"I'm still qualified to fly and continue to fly," he said. "NIMA's products are very im-

portant to me, personally, as a pilot."

As he reflected on NIMA's formation from eight separate entities and the next step, its transformation to Geospatial Intelligence, he said, "I think it's important to remember that all these various pieces are still critical. And while we need a unifying theme, we can't leave out any piece. They are all critical in the way we go forward with NIMA."

ON MY MIND...

continued from page 3

missions and people. They are, I believe, sacred public trusts, for which we—no matter what our job—share responsibility.

This approach also reinforces the crucial importance of declaring and enforcing an "organizing principle" that serves as the underlying constant, so that the impact of moves is not so severely affected by personalities and other such subjective factors.

Let me conclude with a separate, but related subject.

Recently, General Richard B. Myers, the Chairman of the Joint Chiefs of Staff, honored us with a visit to the Headquarters at Bethesda. It was a short, but very productive session; General Myers was highly complimentary of the work NIMA is doing, and very positive about the changes we have under way. You all share in this; I am very pleased and proud, as everyone in NIMA should be.

JAMES R. CLAPPER, JR.
Lieutenant General, USAF (Ret.)
Director

NIMA and NASA Sign Agreement

By Muridith Winder

People around the world will soon get to see their planet in a new way, as NASA extends the release of topographical maps collected during the 2000 Shuttle Radar Topography Mission (SRTM).

NASA and NIMA, partners in the shuttle mapping mission, have agreed on a policy to provide 90-meter (295-foot) resolution digital-elevation data from sites outside the United States to qualified researchers. Selected data will simultaneously become available to the public. The two agencies also made public the mission's research-quality 30-meter (98-foot) resolution topographic data for the entire continental United States.

NIMA Director retired Air Force Lt. Gen. James R. Clapper Jr. and NASA Administrator Sean O'Keefe signed the agreement July 10 at NASA Headquarters, Washington.

"SRTM is one of the best geospatial collection tools not



NASA Photo by Bill Ingalls

NIMA Director retired Air Force Lt. Gen. James R. Clapper Jr. and NASA Administrator Sean O'Keefe sign an agreement on the release of Shuttle Radar Topography Mission data.

only in NIMA's experience, but in the history of mapping," Clapper said. "This mission helps meet our strategic goal of providing the best geospatial information to our customers."

He added, "For civil applications, the improved data is likely to find many uses that will save lives and enhance economic development around the world."

"Americans take for granted the quality of U.S. topographic maps, but for millions of people around the world, particularly those in the frequently cloud-covered equatorial regions, the elevation maps created with these data will be 10 times more precise than the best available

today," O'Keefe said. "That kind of improvement will lead to significant advancements in aviation safety and mitigation of natural hazards, and to smarter and more sustainable urban development, to name but a few applications."

Still in discussion is a release policy for international 30-meter (98-foot) resolution measurements. However, at NIMA's discretion, some 30-meter resolution international data may be made available in special situations in which the information can help protect life and property, such as during volcanic eruptions and floods; NASA, however, will have access to such data for its sponsored scientific research.

New Business Executive

NIMA's new Business Executive (BX), Dr. Robert H. Laurine Jr., was formerly Deputy Director of NIMA's InnoVision Directorate.

Laurine and Lloyd Rowland, the new Deputy Business Executive, co-chaired the National System for Geospatial Intelligence (NSGI) Enterprise Transformation Integrated Product Team (NETIPT), architect of the NIMA transformation.

As BX, Laurine sets the course for NIMA's transformation. He is responsible for crosscutting issues, strategic plans, programs, resources and facilities.

A native of West Point, N.Y., Laurine joined the Defense Mapping Agency, a forerunner of NIMA, in 1983. He was the lead system engineer for the Agency's Digital Production System Migration Program, a transition from custom systems to commercial hardware and software. Laurine was a computer engineer at the Central Imagery Office, another forerunner of NIMA, before joining NIMA at standup. He earned his doctorate in information technology and systems engineering from George Washington University.



Dr. Robert H. Laurine Jr.

SRTM Data Sets Produced for Crisis

NIMA interrupted the processing of raw data from the Shuttle Radar Topography Mission (SRTM) to provide crisis products for the war on terrorism.

NIMA and two contractors, Boeing/Autometric and BAE Systems, produced and delivered over 2,500 one-degree-square cells of "unfinished" SRTM Digital Terrain Elevation Data (DTED®) Level 2 over key areas of interest. A one-degree-square cell is 3,600 square nautical miles at the equator (diminishing slightly in size moving away from the equator). Level 2 has elevation post spacing of about 30 meters (about 98 feet).

The SRTM Program Office and contractors performed a short quality check on the crisis data before delivering it directly to the Digital Products Data Warehouse (DPDW) and Web-based NIMA Gateway for access by customers.

The data were labeled as "unfinished" because production timelines did not allow for the

editing that will be performed on the non-crisis SRTM DTED. However, the SRTM Program Office assessed the accuracy of 500 of the cells and determined that the data are twice as good as the required accuracy. It is expected that similar results will be obtained for all the SRTM data after NIMA's contractors complete routine finishing.

The SRTM data, including the data used to produce the crisis products, were collected during an 11-day flight aboard NASA's Space Shuttle Endeavour in February 2000. The historic mission collected the most extensive and detailed height measurements of the Earth ever gathered.

NASA's Jet Propulsion Laboratory (JPL) has been processing data gathered aboard the Space Shuttle, which will be transformed by contractors into DTED Level 2. A NIMA product, DTED is a uniform matrix of terrain elevation values that provides basic quantitative data for systems and applications requiring

terrain elevation, slope and/or surface roughness information. DTED is available at several levels of detail.

The SRTM acquired data over about 80 percent of the Earth's landmass, or 99.96 percent of the intended collection area. Before the SRTM, NIMA's coverage for DTED Level 2 was only about 5 percent of the Earth's landmass.

With the completion of the crisis data production, JPL was able to begin global data production in April and will complete its delivery of all six continents to NIMA contractors for finishing by the end of 2002. In addition to the DTED 2, JPL will also be producing a suite of SRTM DTED 2-related products: Terrain Height Error Data (THED), Seam Hole Composite Map (SHCM) and Orthorectified Image Mosaic (OIM).

The NIMA contractors' finishing tasks include screening the data for anomalies or format errors, deleting spikes or wells (posts that are abnormally high or low compared to surrounding posts), and interpolating small voids in the data collection.

The contractors are scheduled to commence finishing in September and are slated to complete finishing of the SRTM data products in the summer of 2004.

Production of the SRTM DTED Level 2 data set is in direct response to a Joint Staff and Intelligence Community requirement for elevation data to support numerous mission applications and more than 160 different customer systems. The SRTM DTED 2 is an integral component of the NIMA's Geospatial Foundation framework, which is critical to "knowing the Earth" and showing our customers the way.

— SRTM Program Office



Ikonos 1-meter imagery is overlaid onto SRTM DTED Level 2 in this 3-D perspective view of Kabul, Afghanistan, courtesy of Space Imaging Inc.

SRTM DTED Fulfills Key Requirement of DoD and IC

Digital Terrain Elevation Data (DTED) supports numerous applications including mission planning, terrain modeling, visualization, simulation, advanced navigation and weapons targeting. With elevation post spacing of about 90 meters, DTED Level 1 holdings cover about 70 percent of the Earth's landmass at present. Data quality varies widely, depending on the source data.

NIMA's current DTED Level 2 is better but its coverage is very limited (about 5 percent of the world). DTED 2 provides the elevation component of the NIMA Geospatial Information Framework, an essential element of the Joint Vision 2010 concept of information superiority. The DoD Joint Staff and the Intelligence Community mandated the production of DTED 2 in 1995 because the paucity of the data was the major inhibitor to realizing their requirement for a common understanding of the operational theater.

To overcome lack of DTED 2, NIMA funded the SRTM program to produce a near-global, homogeneous DTED 2 data set. In addition to offering the best



The SRTM acquired data over about 80 percent of the Earth's landmass. One-time coverage is shown in green, areas covered twice are yellow-green, and areas not covered are red. Most of the area in red lies outside the planned coverage area, as the mission accomplished 99.96 percent of its data collection objectives.

technical solution to fulfilling the DTED 2 requirement, SRTM also offered significant cost savings when compared to traditional collection and processing methods. If NIMA had decided to invest the same amount in producing identical data using traditional means, the funding would have covered only about 1,100 one-degree-square cells of data, compared to the 14,353 cells of data that SRTM is delivering. This equates to a 14 to 1 return of investment.

While the SRTM DTED complies with the current DTED specifications, there are several notable differences between the traditional and SRTM DTED. Unlike traditional DTED, the SRTM DTED depicts the radar

reflective surface of the terrain. Therefore, large vegetative and man-made features such as forests, buildings, bridges and towers may be visible in the data. Furthermore, the radar used by the SRTM penetrated vegetative features by as much as several meters so the SRTM DTED elevation posts actually correspond to a point somewhere between the bare earth elevation and several meters below the top of the vegetative canopy. Finally, SRTM DTED cells may contain areas where no elevation values were reported due to radar artifacts such as layover, shadow and phase unwrapping errors. Based on analysis of approximately 500 cells, 92 percent of the cells are greater than 90 percent complete.

Online Tutorial Introduces SRTM Products

NIMA has taken steps to educate users of SRTM data. A Web-based tutorial covers background information on SRTM, descriptions of the various SRTM data products, information on dissemination and policy procedures, and a sample data set for the user to view.

The National Geospatial Intelligence College, InnoVision

Directorate Frontiers Office (IF) and SRTM Program Office produced the tutorial in a team effort led by Chuck Pessagno of the SRTM Program Office. Army Capt. Jack Haefner of the College put the tutorial in a Web-based environment, and Anita Davis of InnoVision integrated the NIMA customer perspective. Jeff Haase, Barry Heady, Ted Isringhaus, George Kroenung, Jim Little, Jim

Slater and Jim Spitznas tested the product, ensuring ease of use.

The SRTM Tutorial is currently available on the NIMA SIPRNet and JWICS Gateways under "Products and Services." Customers can order it on CD, through the Defense Logistics Agency (DLA), at acctmgr@dsrc.dla.mil. Ask for the SRTM DTED CD, Series TRHG, NIMA Stock Number 7644014941024.

Geospatial Transition Plan Aims Toward Integrated Information Environment

By John Liebsch and Bill Watts

In August 2001, NIMA published the Geospatial Transition Plan—a document that sets the Department of Defense and Intelligence Communities on a course toward integrating digital geospatial information (not products!) into every aspect of their missions. The GTP lays out specific objectives and steps toward the fielding of an integrated information environment that supports the needs of NIMA's customers.

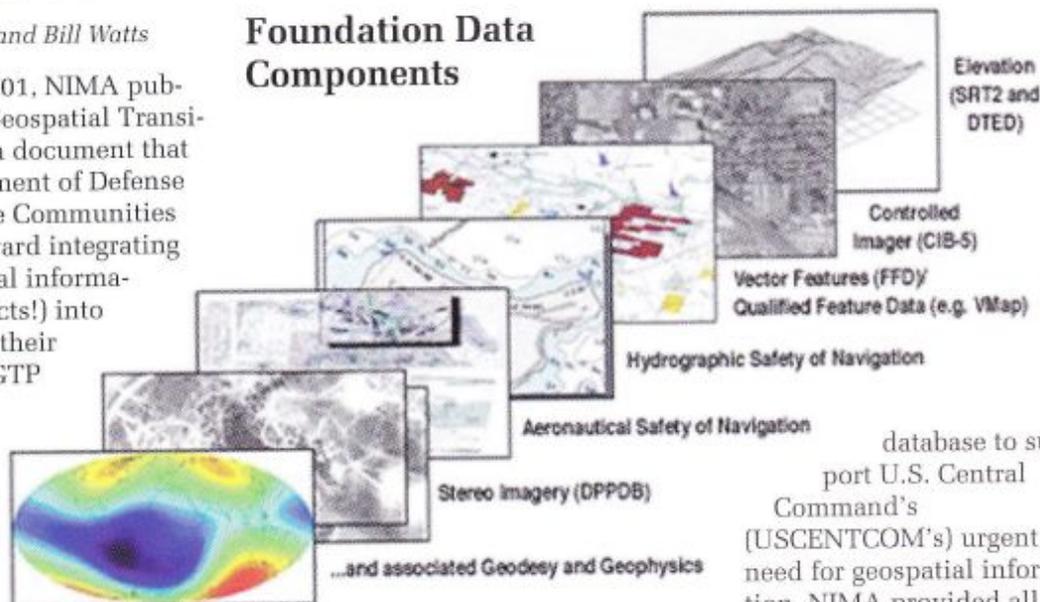
At the core of the GTP is a readiness and responsiveness strategy based on populating NIMA's databases with—and providing to our customers—planning-level information called Foundation Data.

Foundation Data is an assemblage of geospatial data collected near-worldwide, independent of missions, that is relatively stable, accurate and tied to a common geometry.

Foundation Data has seven components: elevation data, stereo imagery, feature information, monoscopic imagery, safety of navigation information (both hydrographic and aeronautical) and geodesy and geophysics information. The strategy also includes building the capacity to respond to crisis requirements by adding to or intensifying Foundation Data into mission-specific data to meet specific geospatial needs of our customers.

The GTP is now one year old and the foundation-based opera-

Foundation Data Components



tions described above are very much at the forefront of NIMA's approach to meeting its mission. NIMA Director retired Air Force Lt. Gen. James R. Clapper Jr. recently released a message to our military customers citing his personal support for implementation of the GTP. Within that message, Clapper delineated the progress that has been made, as well as the work that needs to be done, to bring about foundation-based operations.

Mission-Specific Data consists of intensified Foundation Data encompassing greater detail (density and resolution) or additional features and/or attributes to meet specific mission requirements.

The Director highlights the need to search for innovative mechanisms for implementing the GTP. One example is the establishment of country databases for the war on terrorism. Immediately after the September 2001 attacks, NIMA tasked its contractors to develop a feature

database to support U.S. Central Command's (USCENTCOM's) urgent need for geospatial information. NIMA provided all available supporting information to the contractors. They, in turn, conflated that information into a feature database that was used as the feature component of Foundation Data.

After consulting with USCENTCOM personnel, NIMA and supporting contractors intensified the feature data to meet the customer's mission-specific needs for hard copy topographic line map requirements. They produced this data within three weeks—foundation-based operations working today and meeting an operational need.

Feature Database

NIMA is now taking delivery of a more advanced database, the Geospatial Intelligence Feature Database (GIFD). The GIFD incorporates content from the country databases and allows both commercial and government-developed systems to populate and draw from a common database.

NIMA cannot overstate the importance of the emergence of GIFD. Prior to the country databases and GIFD, NIMA at-

tempted to populate the feature component of its databases by producing Foundation Feature Data (FFD). That dataset, while very accurate, is too expensive to produce over large areas of the world. After five years of production (in-house and contract), NIMA has produced 587 cells (approximately one degree x one degree) of a 19,200-cell requirement. It was NIMA's hope to produce 10,700 FFD cells by 2010, but costs were prohibitive. Compounding the problem was the inability to determine where FFD would be needed next; only four cells of FFD existed in Afghanistan at the outset of Operation Enduring Freedom. (Note: Ninety-seven one-degree cells cover Afghanistan.)

Implementation Team

John Liebsch leads the Geospatial Transition Plan Implementation Team (GTPIT), which is responsible for:

- Facilitating implementation of the GPT;
- Advocating funding for the Geospatial Roadmap (GTP Annex);
- Providing information to NIMA's customers and work force;
- Collaborating on the development of an integrated digital environment that is accessible to NIMA's customers, and;

About the Authors

John Liebsch leads a large team of talented professionals dedicated to making the Geospatial Transition Plan a reality. He is also the Special Assistant to NIMA's Technical Executive and has worked for NIMA and predecessor organizations for over 21 years. This includes serving as a liaison to the U.S. Strategic Command (USSTRATCOM), lead of the NIMA Support Team to the U.S. Army, and various other leadership positions throughout the Agency. His education includes a Bachelor of Science from South Dakota State University and a Master's of Public Administration from Shippensburg University. He is also a graduate of the Armed Forces Staff College and the Army War College.



John Liebsch

Bill Watts is currently the Operations Officer for the Geospatial Transition Plan Implementation Team. He retired from the Army as a lieutenant colonel in 1994 while serving the Defense Mapping Agency, a NIMA predecessor agency, in the Plans and Requirements Directorate. His education includes a Bachelor of Science in geology from St. Lawrence University and a Master of Science in geodesy and photogrammetry from Iowa State University. He is also a graduate of the Army Command and General Staff College and the Armed Forces Staff College. Watts is currently supporting NIMA as a contractor employed by Veridian.



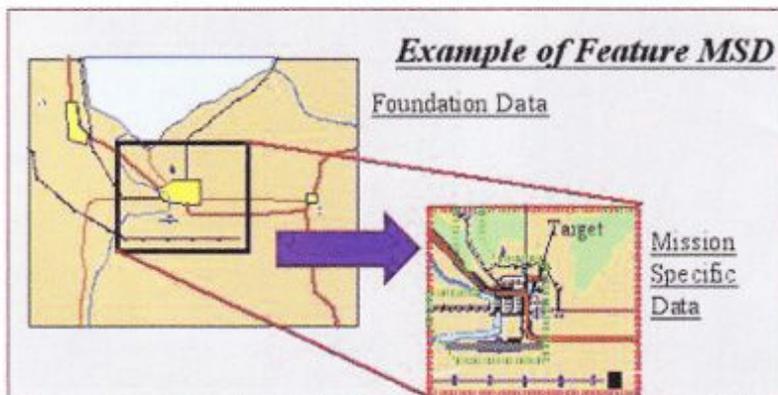
Bill Watts

- Improving communications between NIMA and its customers in the area of Geospatial Intelligence.

GTPIT members include Paul Harwig (Analysis and Production Directorate/P), Mark Olson (P), Lynn

Hamilton (InnoVision Directorate/I), Nick Bekanich (P), Diane Washburn (Acquisition Directorate/A), Pat Biggar (P), Julie Yarko (Technical Executive's Office/TX), Marjorie Zimmerman (P), Doug Carl (P), Kurt Savoie (Training and Doctrine Directorate/TD), Dave Hampel (P), Doug Stiles, Rich Johnson, Dudley Leath and Bill Watts. For more information on the GTP, call a team member at (703) 264-3104 or (703) 264-3164.

The GTP is being reprinted. To obtain copies, call Lynn Hamilton at (703) 264-3066 or download the GTP from either the GTPIT SCEN Web site: [http://apwfs01.nima.smil.mil/ir/docs/uceg/03oct01\(u\)_usigs_gtp_aug2001.pdf](http://apwfs01.nima.smil.mil/ir/docs/uceg/03oct01(u)_usigs_gtp_aug2001.pdf) or the GTPIT SBU Web site: <http://osis.nima.mil/isdm/gtpit/index.html>.



Foundation Data and Mission Specific Data

A Growing Success Story

Integrated Exploitation Capability (IEC)

By Ann Carbonell

What do these have in common?

- Preparing the Daily White House intelligence briefing;
- Extracting digital geographic features from classified reconnaissance imagery;
- Monitoring indications and warning of the proliferation of weapons of mass destruction;
- Analyzing a potential adversary's readiness posture;
- Updating maps because of observed changes to features.

These are just a few applications that rely on NIMA's Integrated Exploitation Capability (IEC).

What is IEC?

IEC is NIMA's first acquisition of a large information system that relies on current and emerging commercial-off-the-shelf (COTS) technology instead of specialized software coupled with custom-engineered hardware. IEC replaces and subsumes an aged government-built digital and film-based imagery processing and analytical system, as well as many NIMA and military command "home grown" imagery



NIMA Director of Acquisition William R. Alder Jr. addresses a conference introducing users to the Integrated Exploitation Capability (IEC), NIMA's first acquisition of a large information system that relies on commercial off-the-shelf (COTS) technology.

Photo by Larry Franklin

display and geospatial production systems.

With the IEC, NIMA provides users worldwide with the ability to receive, manage, store and access digital imagery and data from all national, theater and commercial sources. By integrating desktop exploitation tools, networks and data storage architectures, the IEC enables geospatial intelligence analysts to perform their specific organizational missions on a single workstation.

Tested in War

Operation Enduring Freedom severely tested the scalability, interoperability and rapid deployment capabilities of the IEC. The IEC Program Office, contractor Lockheed Martin and supporting subcontractors and vendors demonstrated incredible dedication by supporting many demands beyond those normally expected. Together, they fulfilled numerous system and staffing requirements to establish crucial capabilities for intelligence agencies and the military.

"The IEC captures and demonstrates the benefits of merging imagery and geospatial technologies," NIMA Director retired Air Force Lt. Gen. James Clapper Jr. said after attending a briefing and demonstration of IEC capabilities. "The partnership I witnessed today in the IEC Program between NIMA and industry is the example of how a partnership should work," he added.

"Quality relationships with our vendors and team members are key elements to our ability to deliver products that our users need," said Jim Sapcoe, IEC

About the Author

Ann Carbonell works in the Acquisition Directorate as the Integrated Exploitation Capability Program Manager. She became the program manager on Sept. 11, 2001, after serving six months as deputy program manager. Carbonell came to NIMA in 1996 after spending three years as a contractor supporting NIMA and the National Reconnaissance Office and nine years supporting the Air Force. She has a bachelor's in electrical engineering and a master's in computer science.



Contracting Officer's Technical Representative. "It is our responsibility to know what the exploitation needs of our customers are and then be able to map those needs to the appropriate commercially available solution." Occasionally a requirement can only be met with a government-developed software tool. In that case, the IEC is flexible enough to integrate the government-developed tool as well.

Sounds simple, doesn't it? Just identify and then buy the right products, and solve all imagery users' needs. There have been IEC critics who have asked, "Why can't a collection of COTS and government-off-the-shelf products just be purchased from

the General Services Administration list?" In fact, IEC pursues every viable opportunity to "just buy it."

However, according to John Harvie, IEC Chief System Engineer, mere COTS availability doesn't relieve the government from acquiring and deploying properly engineered systems.

"A properly engineered system must meet user requirements and have subsystems that interface with other systems reliably," Harvie says. "It can be sustained over time and in different locations, and it can be continually upgraded and improved."

NIMA utilizes the IEC prime contractor to manage its relationships with the vendor community, as well as to track the ever-changing technology arena for emerging solutions that may be inserted into the IEC. The prime contractor provides the engineering design and software framework that loosely (but reliably) integrate the COTS products to satisfy the geospatial intelligence requirements, system standards and certifications practices of the Intelligence Community and military users. The contractor also provides hardware and software configuration management, system maintenance and system upgrades to installations across the country and around the world.



Photo by Larry Franklin

Continuing and reinforcing dialog between the IEC Program and its user community was a key objective of a two-day conference that drew more than 120 users to Lockheed Martin's Gaithersburg, Md., facility in May.



IEC integrates Unix and personal computer desktop exploitation tools from world leaders in geospatial and information management technology.

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NIMA Uses Commercial Imagery To Support War on Terrorism

By Raymond Gastelum

NIMA's Commercial Imagery Program (CIP) plays a vital role in supporting the war on terrorism. According to NIMA Director retired Air Force Lt. General James R. Clapper Jr., "At the onset of Operation Enduring Freedom, we immediately engaged with the commercial imagery industry, using it as a supplementary source to our national technical means. I think we did so with great effect. The commercial imagery industry has made and is making substantial contributions to the war."

Data from Space Imaging's IKONOS satellite was used to support intelligence activities, military planning and operations, damage assessments, public diplomacy and humanitarian assistance. The imagery was used to help build databases of the region to support quick turn-around requests for new geospatial products.

IKONOS imagery was also collected over key U.S. cities and sites in support of Homeland Defense. Having complete and current domestic imagery—that can be shared with a range of defense, law enforcement and civil agencies—is key to successful contingency planning and counterterrorism operations.

Commercial Imagery Has Advantages

A major advantage of commercial imagery is that it is unclassified. The product can be shared with multiple organizations and coalition partners. The unclassified product proved invaluable in the war effort as the United States joined forces with numer-



© 2001 DigitalGlobe (All Rights Reserved.)

DigitalGlobe's Quickbird satellite collected this 61-centimeter image of a nuclear reactor under construction in Bushehr, Iran last December. Pipe sections for the water intakes lie on the ground and a crane is observable over the spherical containment vessel.

ous allies in combating terrorism. Commercial imagery also has the advantage of allowing government satellites to concentrate on higher priority activities.

Multispectral Capabilities

Commercial imagery offers multispectral capabilities that provide the means to analyze such things as vegetation type and condition, soil types, transportation networks and damage from floods and other disasters.

Demand for commercial imagery jumped after Sept. 11. CIP and the Commercial and Airborne Branch of the Central Imagery Tasking Office (CTO) went into 24 X 7 operations to meet customer needs. CIP—

through CTO—purchased IKONOS panchromatic and multispectral imagery of both the World Trade Center and the Pentagon. All told, CIP purchased more than 400,000 square kilometers over crisis areas abroad and over 42,000 square kilometers for Homeland Security.

Commercial Satellite Imagery Library

CIP was able to meet customer demands through the use of its Commercial Satellite Imagery Library (CSIL). The CSIL is the master archive for the storage of commercial images. The holdings consist of over 40,000 images of 213 countries including

IKONOS from Space Imaging, QuickBird from DigitalGlobe, France's SPOT systems, NASA's Landsat systems, and a variety of other images from civil and commercial sensors. The Library was established in 1996 to eliminate duplication and to gain maximum benefit and distribution of imagery licensed to the Defense Department and the Intelligence Community. The CSIL is located at the Defense Intelligence and Analysis Center (DIAC) on Bolling Air Force Base in Washington, D.C. and until recently was managed by the Defense Intelligence Agency as the Executive Agency for NIMA. NIMA assumed full responsibility over CSIL operations in 2002.

SkyMedia goes into Crisis Mode

Depending on the urgency of a request, NIMA uses traditional or overnight shipping—or it can use SkyMedia, a commercial broadcast service, to disseminate commercial imagery to customers. In order to meet customer demands, SkyMedia expanded its satellite time in the continental United States to 24 X 7 operations. Additionally, nine SkyMedia sites were identified as part of the Crisis Response Team (CRT), giving them priority on all images of the crisis area.



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The Qala-I-Jangi fortress southwest of Mazar-e-Sharif is visible in this one-meter-resolution panchromatic image captured by Space Imaging's IKONIS satellite last October. The fortress is where CIA Agent Mike Spann was killed during Operation Enduring Freedom.

The Future of Commercial Imagery

The commercial imagery industry is relatively new, as is NIMA's usage, so it has been a joint learning process for both partners. In October 2001, Digital Globe successfully launched its

QuickBird system, and by the end of 2002, OrbImage is scheduled to have its system in orbit. NIMA will continue to educate the community on commercial imagery applications and specifications and work with the vendors.



About the Author

Raymond Gastelum is a Booz Allen Hamilton consultant supporting NIMA's Commercial Imagery Program. He has been working on the program for two years. He earned his master's degree in international policy studies with a minor in Russian from the Monterey Institute of International Studies. Prior to working for Booz Allen Hamilton, he spent three years working as an international affairs analyst for the Congressional Research Service of the Library of Congress and two years as a Congressional staffer for the U.S. House of Representatives and U.S. Senate, respectively.

NIMA hosts the "GGI" Industry Forum

By John Simon and Sue Vieth,
Commercial Partnerships Division

NIMA's Commercial Partnerships Division (PPSC) recently hosted an Industry Forum in Arnold, Mo. to expose prospective vendors to an exciting new contract. The forum featured the Commercial Partnerships team's new initiative, the Global Geospatial Intelligence (GGI) contract. NIMA held a full day of informational presentations, covering business strategies and objectives, including an exchange of questions and answers.

This Industry Forum was a great success, with over 90 contractor personnel from 40 firms attending. A dedicated team of PPSC planners, working together with representatives from Security, Facility Support and Visual Information, made the event possible.

Keynote speaker Michael Rodrigue, director of the Office of Production Support, spoke about NIMA's strategic intent to provide geospatial intelligence from a variety of sources to our customers in the best timelines possible.

"NIMA contract production service providers will continue

to be funded on annual Congressional appropriations, continue to meet ever-changing annual requirements due to changing world situations such as the Sept. 11 terrorist attacks, and will be expected to be always



James Sippel/PPSC Chief, explained NIMA Organization and its relationship to GGI.

ready for any contingency," said Rodrigue.

Additional keynote speaker William McCarty, deputy director of the Procurement and Contracts Office, addressed contractor help for NIMA to change its

business practices by leveraging new technologies that maximize NIMA's return on investment.

"NIMA needs to move away from current quality control business practices to a reliance on contractor quality assurance," said McCarty. "This will take some very creative incentives."

James Sippel, Chief of the Commercial Partnerships Division, and Charles McCaugh, Branch Chief of the Commercial Partnerships Division, addressed the realignment of PPSC.

The goal of the realignment is to more effectively coordinate with the newly formed production regions and enhance contract business strategies. Sippel and McCaugh spoke of a vision whereby new and innovative task orders will facilitate the free exchange of information and ideas. They also noted that the new contract would replace the existing Omnibus and NIMA Production Prototype (NPP) contracts.

Deborah Olson, a contracting officer in the Procurement and Contracts Office and solely responsible for this contract effort, explained the solicitation process to forum participants.

Tony Fugate, Jim Clawson, Doug Thomas, Barry Papke and John B. Williams, subject matter experts from PPSC, further described and gave examples of various production services the new contract requires.

Since the meeting, vendors have made well over 100 inquiries. PPSC takes pride in meeting NIMA's Strategic Intent by closely working with commercial industry.

For more information on this commercial partnership, contact the following PPSC folks in NIMA St. Louis: John Simon at (314) 263-4802 x122; Les Kemp at (314) 263-4826 x152; or Sue Vieth, at (314) 263-4826 x123.



Deborah Sterling and Bob Butterworth/PPSC, make plans for the Industry Forum.

How the NSGI Requirements Process Works

Photo by Tony Boone



Chief Sharon Dunkle (left) meets with members of the NSGI Requirements Branch, from left, Michael Dee, Air Force Capt. Todd Roberts, Dan Ferrentino, Navy Lt. Cmdr. Helen Masek, Christopher Gede, Italo Jacob, Jim Miller and Tom Apollonio. Not pictured: Greg Henson, Jane Oswald and Steve Shiraishi.

By Lt. Cmdr. Helen Masek

The Office of Geospatial Intelligence Management (OGM) is the place to go for customers who need additional Integrated Exploitation Capability (IEC) workstations or additional imagery analysts. Responsible for maintaining the OGM Requirements List, the NSGI Requirements Branch (OGMRL) handles requests like these and others related to the National System for Geospatial Information (NSGI).

Branch Chief Sharon Dunkle leads a staff of Requirements Officers and Web and database experts, including both military and civilian employees with a wide range of experience.

Federal agencies, the military commands and services, and directorates within NIMA with system-related requirements submit their requests to OGMRL via the NSGI Requirements Web site on the SBU, SCEN or JWICS computer networks. The Web sites are:

SBU: <http://goldweb.nima.mil/needit>

(Unclassified inputs via fax only)

SCEN: <http://needit.nima.smil.mil/>

JWICS: <http://needit.nima.ic.gov>

JWICS is the preferred method to submit a requirement because this site accepts the widest range of classified information. It is also where the OGMRL database is hosted, which facilitates data transfer.

The first NSGI requirements cycle handled over 550 system-related customer requests competing for funds in the fiscal 2003-2007 Program Objective Memorandum/Intelligence Program Objective Memorandum (POM/IPOM). The current cycle is handling over 420 requirements for the fiscal 2004-2009 POM/IPOM.

The next cycle will handle inputs for fiscal 2005-2009 POM/IPOM consideration. OGMRL will accept inputs until Oct. 1, 2002 for this cycle. After

this date, customers can begin submitting requirements for fiscal 2006-2011 POM/IPOM consideration.

Every year the procedures associated with the previous requirements cycle change slightly as a result of customer comments and internal review. However, the basic process is stable and generally well received by customers.

A single requirements cycle is actually a two-year process from start to finish. The Web

sites are open for one year before closing to accommodate the next cycle's new requirements. Once the Web sites are closed, Requirements Officers analyze the requirements.

OGMRL facilitates a session of the Geospatial Intelligence Board (GIB), where representatives from the commands, services and agencies have the opportunity to brief their requirements to NIMA and the Intelligence Community (IC). While this customer forum was cancelled for the current cycle because of the Sept. 11 terrorist attacks, the GIB session will be scheduled for the upcoming budget cycle.

After the GIB session, the requirements undergo significant scrutiny and analysis by the Requirements Review Panel. The purpose of this internal NIMA panel is to assign requirements to the appropriate NIMA budget code for final review and funding resolution when the POM/IPOM kicks off, usually by Feb. 15.

OGMRL Requirements Officers generally receive feedback on the status of all the requirements at the end of the POM/IPOM cycle and notify customers.

Work in the NSGI Requirements Branch is fast-paced and challenging. The camaraderie among the members is among the best in NIMA. Anyone interested in learning more about the NSGI Requirements Branch and the NSGI requirements process should call Sharon Dunkle at (703) 755-5246.

About the Author

Navy Lt. Cmdr. Helen Masek is a Requirements Officer in the NSGI Requirements Branch (OGMRL). She is scheduled to retire from the Navy on Dec. 1.



NIMA and NSA: Eyes and Ears at Work

From the NSA Communicator*

In the war on terrorism, the relationship between imagery and intelligence has “come into its own.” NIMA Director retired Air Force Lt. Gen. James R. Clapper Jr. made this remark as he



Photo courtesy of NSA

NIMA Director retired Air Force Lt. Gen. James R. Clapper Jr. addresses Geospatial Intelligence Expo 2002 at the National Security Agency.

opened the Geospatial Intelligence Expo 2002 at the National Security Agency (NSA) in June.

The NSA has been a partner of NIMA and its predecessor organizations since 1960. Now both are undergoing cultural reorganizations. One result of this transformation and the collaboration is the ability to do multi-intelligence (multi-INT) reporting. The work has become a hallmark for other agencies. Currently,

NSA and NIMA are working together to develop prototype technologies for information assurance, telecommunications and information management.

“Geospatial intelligence” is the term now being used to encompass all types of imagery and imagery intelligence. It is information about any object that can be located on the Earth; it conveys the “what” and the “where.” Geospatial intelligence provides a basic foundation—every *thing* and every *body* must be some *place*. It signals a new vision at NIMA and also leads the way for future change to the name of the agency itself to “National Geospatial Intelligence Agency.”

NIMA and NSA participate in quarterly meetings that serve to broaden collaboration at both the operational and corporate levels. Working together, the two agencies have broadened multi-INT activities and are incorporating “best in the business” technologies and concepts to become the leaders in all-source geospatial intelligence.

The attacks on the United States have changed Americans’ perceptions of national security and the nation’s response has served to accelerate some of the changes already under way in both agencies. Congress, the White House, military commanders, law enforcement officials and other customers require reliable, timely, current information that is as detailed and accessible as possible. NIMA is working to provide information through a common framework to give all of its customers and partners information superiority across the full spectrum of national security operations.

*The *Communicator* is the corporate publication of the National Security Agency.

Webster to Chair IHO Committee

Denise Webster, associate general counsel for international law in the Office of General Counsel (OGC), was elected to chair the Legal Advisory Committee (LAC) of the International Hydrographic Organization (IHO).

The United Kingdom nominated Webster at the IHO conference in Monaco last April. She was subsequently elected by acclamation to the position of Chair for a five-year term. “The LAC should prove quite busy in the next few years as the conference established a working group that will, among many tasks, propose a revision to the IHO Convention,” she said.

Two other NIMA personnel also attended the conference as members of the U.S. delegation, Chief Hydrographer Chris Andreason and Roy Soluri, Deputy Chief of the Maritime Safety Information Division.

The mission of the IHO is to help make navigation easier and safer throughout the world by improving nautical charts and pursuing intergovernmental cooperation in hydrography. Sixty-four member states attended the conference.



Denise Webster sits with the U.S. delegation at a conference of the International Hydrographic Organization.

NIMA West Wins EPA Commuter Award

By Jim Mohan

NIMA St. Louis is one of eight government agencies to receive top honors from the Environmental Protection Agency (EPA) and the Department of Transportation during National Transportation Week. Christine Todd Whitman, EPA Administrator, presented NIMA the 2002 Commuter Choice Excellence Initiative Award. Paul Kieffer, Security and Installation Operations



Paul Kieffer

Directorate, accepted the award on behalf of the Agency.

The EPA cited NIMA for promoting car pools since 1994. Currently NIMA has over 500 personnel registered in 207 car pools.

"NIMA continually promotes car pooling and clean air incentives through Rideshare Fairs, e-mail, Agency publications, bulletin board announcements and the NIMA Web site," reads the award citation. "Through Ridefinders and Citizens for Modern Transit, NIMA offers the Guaranteed Ride Home Program for transit users, bicyclists and car poolers." NIMA also was cited for its use of subsidies for transit users and for extolling the tax-free benefits of van pooling.

The Commuter Choice Excellence Initiative Award is presented annually to organizations for commitment to promoting commuter activities and benefits. Co-sponsored by the U.S. Environmental Protection Agency and Department of Transporta-

tion, the Commuter Choice Leadership Initiative (CCLI) is a business-government partnership that encourages American commuters to make the "meaningful and environmentally responsible choice" to travel to work without driving alone.

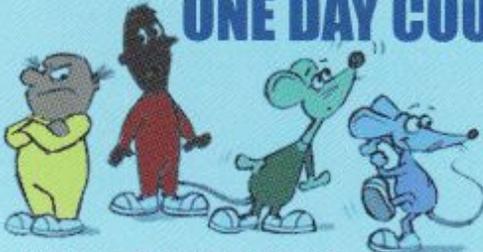
School of Leadership and Professional Services

New! NIMA 

BECOMING A CHANGE RESILIENT ORGANIZATION

Course Number
003161

ONE DAY COURSE



This course blends the needs and perspectives of the individual with the objectives and focus of the organization. By understanding the six stages of the Change Cycle™, each participant will gain knowledge and practical skills that can be used to enhance personal and organizational communication. Participants will learn how to pinpoint exactly where they are in the Change Cycle™ and how to use personal skills to manage each of the stages. Through facilitated communication, the group identifies change issues and strategies for solution finding using the Change Cycle™ as a road map.

10 September	LOCATION:	St. Louis - Bldg. 22, Training Rms. A/B
10 October	LOCATION:	St. Louis - Arnold, GO32D
14 November	LOCATION:	D.C. Area - Ft. Belvoir, Bldg. 215, Rm 105

Time: 0730-1530

After this course, participants will be able to:

- Identify the six stages of the Change Cycle™ and how they affect us at the mental, emotional and behavioral levels.
- Pinpoint what stage of the Change Cycle™ they are in, and its relation to a specific personal and organizational change.
- Identify specific skills needed for moving from one stage of change to the next for dealing with successful personal and organizational change.
- Differentiate between proactive and reactive change situations and understand the best skills to use for successful personal and organizational change.

Register With Your Training Coordinator

Summer Sports

Summertime is outdoor sports time for many NIMA people. Bethesda-based cartographer Greg Wilson biked 108 miles across four mountain peaks in France July 6. About 5,000 bicyclists took part in *La Marmotte*, named for a whistling ground hog that lives in the Alps. "It was the hardest thing I've ever done," Wilson said. After 12 hours, 43 minutes, including seven hours of rain, he crossed the finish line atop the last mountain. A total of 2,169 bikers completed the trip in the allotted 13 and 1/2 hours.

In May, Wilson raised \$450 for the Multiple Sclerosis Society, cycling the entire 186-mile towpath along the Chesapeake and Ohio Canal in a day. Excited, he slept only four hours before setting out, he said. It was his second try at a self-designed event in which he was the only participant.



Photo by Photo Breton

Greg Wilson approaches the summit of Col du Galibier, elevation 8,678 feet, the third of four peaks on *La Marmotte*, a bicycle race through the French Alps.

Softball Champions

NIMA's Natural Lites placed second among nine teams in the Open Division of the St. Louis Municipal Softball League this year. Several other NIMA teams also played in the league. An all-city tournament is scheduled for August.

In Bethesda, the Raiders were the top NIMA team in the NIMA-Naval Surface Warfare Center League with an 11-3 won-lost record. The team, led by manager Keith Jones, was aiming for a tournament championship as the *Edge* went to press.



The top softball team in NIMA West, the *Natural Lites* pose after a game in Lyon Park. Seated from left are Barry Auth, Mark Gibson, Mark Wayne, manager Bill Buckwalter, Dean Kalmes and Jim Strande. Standing, from left: Vince Preheim, Bob Logterman, John Benedyck, Mark Schuler, Steve Maneikis and Tracy Young.