

Support Teams Essential to Haiti Earthquake Response

BY LAURA L. LUNDIN AND JAY D. KRASNOW

In response to the Haiti earthquake on Jan. 12, the National Geospatial-Intelligence Agency, using its vast resources and partnerships, provided dynamic and timely geospatial intelligence products to assist federal and nongovernment agencies with the ongoing relief efforts.

As U.S. government agencies, including the Department of State and the Agency for International Development, responded to the disaster, many looked to NGA for help with planning and carrying out recovery efforts. Enlisting its network of NGA Support Teams (NSTs), the agency worked closely with U.S. Southern Command, U.S. Strategic Command, the Defense Intelligence Agency and other agencies to make sure the most effective GEOINT products quickly reached those on the ground in Haiti.

Because the NGA teams faced the challenge of managing large volumes of information effectively and producing GEOINT products under tight deadlines, the agency formed the Haiti Crisis Action Team (CAT) to coordinate the around-the-clock GEOINT response with NGA's mission partners.

Practicing the collaborative principles of Unified GEOINT Operations (UGO), the agency applied the full capabilities of the National System for Geospatial Intelligence (NSG). The leader of the Haiti CAT, as the Americas NSG Operations Executive, enlisted the full gamut of available GEOINT. Employing UGO allowed decision makers, such as the Naval Oceanographic Office and U.S. Transportation Command, to assess the needs of the situation, align efforts and get GEOINT into the hands of emergency responders more efficiently.

Since SOUTHCOM led the Department of Defense's response to the crisis, NGA expanded its NST of GEOINT professionals at the command's headquarters in Miami, Fla., and sent down the Domestic Mobile Integrated Geospatial-Intelligence System, a self-contained command vehicle operated by experts who are able to produce additional geospatial products on site.



NGA worked closely with other responders to the Haiti earthquake to ensure that GEOINT quickly reached those on the ground.

DOD photo



While panchromatic (black-and-white) imagery provided NGA's support team at SOUTHCOM with a baseline for analysis, the command needed additional sources and products in order to be effective in its response.

High-resolution, three-dimensional data offered the most practical solution to the needs of the command. As a result, light detection and ranging, more commonly known as LIDAR, proved useful in a variety of areas. LIDAR is an optical remote sensing technology that uses light from a laser to detect and locate objects, using measurements of light properties to collect data on elevation, depth or height.

Within 48 hours of mission authorization, the NST at SOUTHCOM, in collaboration with the Massachusetts Institute of Technology Lincoln Laboratory, had deployed, collected, processed, analyzed, stored and disseminated vital GEOINT products.

Within 72 hours, the first mission from Miami was flown over Haiti to image initial United Nations food distribution points, and less than a day later, images and products were in the hands of SOUTHCOM analysts.

The LIDAR technology and NGA's analysis of the data provided a day-to-day growth rate of internally displaced persons camps. Understanding the growth of the camps assisted relief operations planning, allowing aid workers to determine food distribution locations. LIDAR also identified previously unknown encampments within forested areas.

“We definitely did a better job of using the information to establish a baseline to determine areas of need and areas that had no change,” said a watch officer with SOUTHCOM's Joint Task Force–Haiti.

Additionally, NST members assessed debris and vertical obstructions, helping identify the best travel routes for responders and helicopter landing areas, as well as plan for recovery and clean-up efforts.

The LIDAR missions eventually expanded to include collection of data over a broader area. According to the watch officer, “NGA's data will also be used to determine floodplains and potential areas susceptible to landslides and mud slides as the rainy season approaches.”

The global reach and collaboration of NGA and its mission partners is evident in other areas as well. For instance, NGA's support team at DIA provided GEOINT products that assessed the earthquake's effects on structures in Port-au-Prince as well as assisted with the



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Responders relied on GEOINT to assist in the earthquake's aftermath.

search for internally displaced people outside the city's borders.

NGA's foreign partners also played a key role in responding to the crisis. The Canadian Directorate of Geospatial Intelligence pulled together a suite of GEOINT products, including topographic line maps, image city maps and route studies between the major cities of Port-au-Prince, Leogane and Jacmel. The United Kingdom Hydrographic Office shipped up-to-date charts to aid in disaster relief planning and operations.

Due to the magnitude of the disaster and the number of agencies and organizations involved, the needs of the mission in Haiti had to be balanced with NGA's and the combatant commands' commitments to ongoing operations in other areas, such as Iraq and Afghanistan.

The job of balancing and coordinating those efforts for NGA's intelligence, surveillance and reconnaissance mission fell to the NGA element at the Defense Intelligence Operations Coordination Center. This team is similar to an NST, but is responsible for coordinating ISR issues between NGA and the combatant commands, while reaching back to access the expertise housed in NGA's core components.

The team at DIOCC also supports STRATCOM's Joint Functional Component Command for Intelligence, Surveillance and Reconnaissance, which balances airborne collection resources and assesses the risks of reallocating these resources through careful global force management.

“It's imperative to balance the competing demands to meet the highest priorities,” said U.S. Army Maj. Jennifer

Smith-Heys, who is the Airborne Operations division chief with the NGA element to DIOCC and JFCC-ISR. “Haiti offers a great example of how we used global force management to maintain our operations on a global scale.”

For example, SOUTHCOM requested full-motion video support for the mission in Haiti; however, a majority of the assets needed for that function resided outside SOUTHCOM’s area of responsibility. NGA’s component at the DIOCC was able to coordinate with NGA and the relevant commands, to allocate the needed collection aircraft.

Furthermore, working with the agency’s Crisis Action Team, the NGA element aligned agency personnel and assets to ensure that sufficient analytic resources within NGA were available to assist the U.S. Air Force’s own efforts to exploit the full-motion video data provided by the Predator collection platforms flown. Between NGA and the Air Force, analysts were able to provide GEOINT analysis and products within 24 hours of collection.

“Using full-motion video collected through the NGA elements’ efforts, commanders of the 82nd Airborne on the ground in Haiti were able to divert friendly forces away from potentially hostile situations,” said Smith-Heys, illustrating just one example of GEOINT’s usefulness in Haiti.

Although the ISR mission has been scaled down, some assets are still operating to assist with the recovery and reconstruction efforts.

The involvement of NGA and its mission partners in the humanitarian relief effort in Haiti demonstrates the global reach and support of the agency’s mission and reflects the growing importance of GEOINT to the global community. While the recovery for Haiti will take months and even years, an integrated, collaborative community of GEOINT professionals will be on hand to assist whenever and wherever needed. P

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