

# MULTIMEDIA MATTERS

By Peter J. Brown

## Satellites Strong At Strong Angel 3

**More than 800 emergency response** and technical support personnel along with two dozen or so satellite-equipped vehicles descended on San Diego in late August for the Strong Angel 3 demonstration at the San Diego Fire-Rescue Department training facility. Strong Angel 3 communications director Brian Steckler, a faculty member at the Naval Postgraduate School in Monterey, was very upbeat, especially when discussing the more effective use of multimedia — distributed and enabled by satellite — for the purposes of disaster response since the December 2004 Asian tsunami.

“Things are indeed moving in the right direction. Perhaps the two most important areas (where) we are seeing satcom-enabled use of multimedia are in situational awareness and real-time prediction,” says Steckler. “Very small and lightweight disaster relief flyaway kits — airline luggage checkable size/weight satellite communications equipment — are resulting in the ability to get communications capabilities on the ground in disaster zones within hours of a catastrophic event.”

Steckler is particularly impressed with the new Inmarsat service called Broadband Global Area Network (BGAN). “Several vendors have BGAN devices available in the market that are as small as a large laptop and can provide 10-client WiFi clouds, ISDN telephony, VoIP telephony and, of course, Ku-band satellite Internet connectivity,” says Steckler, who demonstrated the portable Hughes 9201 BGAN terminal in very remote areas of the Philippines during a summer 2006 humanitarian outreach cruise to Southeast Asia by the hospital ship USNS Mercy. “It became a daily critical component for the rest of the ship’s mission as a flexible command/control/communications equipment suite — in this case by way of extensive use of basic Internet text chat,” says Steckler.

Professor Eric Frost, co-director of San Diego State University’s Center for Information Technology and Infrastructure, served as Strong Angel 3 regional coordinator and was based at the university’s Visualization Center, which served

throughout San Diego County. He reports that many satellite trucks — including the Loma Linda

University Medical Center’s Mobile Telemedicine center — were deployed more than an hour away from San Diego. Strong Angel 3 demonstrated once again that satellite connectivity is absolutely critical for disaster preparedness and response.

“What people often need is an image. Beyond that, things like IP-based videoconferencing — another essential — fit into a satellite pipe just fine,” says Frost.

Frost was quite impressed with the performance of Tandberg videoconferencing software which, because it sends larger packets via satellite, made the traffic easier for routers to handle. Helicopter-based IP video streaming which was redistributed via satellite, also made a strong impression. Two North Carolina-based companies, Disaster Relief and Strategic Telecommunications Infrastructure Co. and SDN Global, with its facility in Atlanta, help make this possible.

Another standout was GATR Technologies from Hattiesville, Ala., which arrived in San Diego with its 10-foot inflatable satellite solution, a rapidly deployable ultralight terminal which can go anywhere and support a 2-Megabit-per-second IP link.

Still, Steckler has identified areas for improvement in the use of satcom in humanitarian operations and disaster relief operations, including a need to reduce high bandwidth satcom costs and the need for pre-negotiated contracts for equipment and services. “This was a major problem in Hurricane Katrina,” he says. “The region needed many more VSAT systems and much more bandwidth and Internet connectivity. But either there were no pre-existing contracts between industry and [the U.S. Federal Emergency Management Agency] or city and state government, and service costs being quoted were astronomical. This resulted in many weeks to augment the VSAT services in the region and throughout the Gulf Coast.”

The loss of hundreds of lives on Java in a July tsunami underscores the need for further work on satellite-

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as the secondary site of operations and the central point for all mapping and processing of incoming visual footage and data from satellite sites

alert and warning systems not just in the tsunami-affected areas of Southeast Asia but worldwide. At the same time the satellite industry's strong performance during Si-2004 Angel 3 needs to be recognized. **VI**