

# Second harvest

Boeing's work on a terminated satellite program could yield bountiful technology for another *By Dave Garlick*

Earlier this year, the U.S. Air Force terminated the competition for the Transformational Satellite Communications System program, much to the disappointment of a dedicated group of engineers in Space and Intelligence Systems who had spent five years developing a highly capable design.

The program was shelved due to shrinking budgets and shifting priorities within the U.S. Defense Department. But the need for the system's capability did not go away.

Fortunately, Boeing can potentially harvest and field some TSAT technologies on other platforms, such as Wideband Global SATCOM (WGS). The first two WGS satellites are in service over the Pacific and Middle East regions and a third is scheduled for launch by the end of this year. The WGS program is on track to field six satellites by 2013 and is already the Defense Department's highest-capacity communications satellite.

Upgrades to future WGS satellites could address two of the three major missions TSAT was intended to satisfy. "Because of our efforts on the TSAT program," said Mark Spiwak, WGS program director, "WGS can be evolved in a low-risk manner very effectively to meet the growing demand for Airborne Intelligence Surveillance and Reconnaissance and Anti-Jam Communications on the Move capabilities."

An enhanced WGS may not look too different from the current model, but it could perform in substantially new ways. "For a small incremental investment, we can offer the U.S. government upgraded WGS satellites with more than twice the capability of the existing design," Spiwak said.

Today's WGS design supports the Airborne Intelligence, Surveillance and Reconnaissance mission, and improvements already are planned for the fourth, fifth and sixth WGS satellites that will expand this capability even further—such as the bandwidth required to handle the huge amount of sensor and video data that is transmitted by the Global Hawk unmanned aerial vehicle.

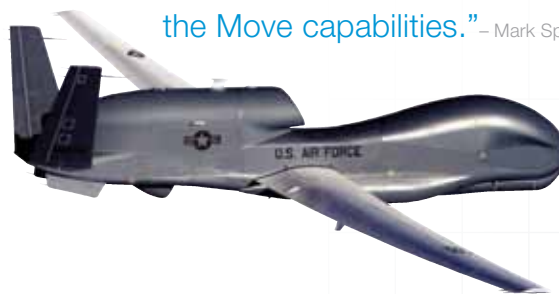
Upgrades to WGS are just one of the

options the Air Force is considering. The technology harvested from TSAT also could be adapted for use on other government or commercial satellites.

Mike Schavietello, WGS deputy program manager, pointed out that the Air Force made a large investment in TSAT and the technology could be lost if it is not used. It is not unlike the problem NASA faces as it sets its sights on a return to the moon 40 years after the Apollo missions, he said. The know-how will go away, people will move on to new jobs and the readiness level of the technology will erode," Schavietello said. "The moon shots used to be routine and now we find ourselves having to develop the technology all over again." ■

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**GRAPHIC (Above):** The Wideband Global SATCOM satellite, shown here in an artist's rendering. *JIM SANTONI/BOEING*

**PHOTO (Left):** Upgraded WGS satellites will support wideband data transfer from unmanned aerial vehicles. *U.S. AIR FORCE*