Airborne ISR meets Satcom

The means to maintaining our nation's physical and economic security have evolved as technology has evolved. Information is now the most valuable asset. The rapid development of advanced tools and tactics to gather, analyze and even steal data has forever changed the way we approach conflicts. The success of an operation — and sometimes even the safety of warfighters or civilians — is based on the ability to detect, deter or eliminate threats.

This information battle is being fought in different ways — over computer networks and in theater. In conflict zones or contested areas, information, surveillance and reconnaissance tools gather information using a number of platforms, including handheld devices, orbiting satellites and manned or unmanned aerial systems. Information is gathered to give warfighters critical intelligence and a tactical edge to meet the mission.

RICK LOBER is vice president and general manager, Defense and Intelligence Systems Division, Hughes.

ISR saves lives.

To achieve mission success, the government and military must partner with industry to help meet the large bandwidth gap that faces them today.

Satellite technology powers communication around the globe, enabling beyond-line-of-sight (BLoS), continuous connections on land, at sea or in the air. BLoS communication is especially important in our current conflict zones, which have urban and mountainous regions that block traditional line-of-sight signals.

The Defense Department's Wideband Global SATCOM (WGS) program continues to expand its satellite fleet. However, in recent years, it has been faced with a bandwidth shortage as UASs threaten to use up to 80 percent of the constellation's bandwidth. Consequently, many UASs are now operated by secure commercial satellite communication systems (SATCOM), which offer higher capacity, increased capabilities and significant cost savings through bandwidth efficient technologies.

As UASs continue to evolve, there has been an increased effort to use helicopters for ISR missions. Recent developments in advanced waveforms have overcome the challenge of transmitting through rotor blades, enabling both manned and unmanned rotary aircraft to be a new asset in the airborne ISR arsenal, employing antennas located directly under the rotor blades. The result is seamless transmissions with zero packet loss.

Commercial SATCOM also has made significant investment in Ka-band technology, as evidenced by recent launches of high-throughput satellites such as JUPITER 1 from Hughes, with well over 100 gigabits per second capacity.

The market will see continued expansion of Ka-band satellite capacity around the globe, and operating in similar frequency bands as WGS. Hence, the Defense Department will have even greater flexibility to help meet its bandwidth gaps. As an added bonus, new Ka-band systems are generations ahead of many airborne Ku-band applications, offering dramatically increased efficiency and reliability.

So what does this mean for airborne ISR? In short, it means warfighters can transmit full-motion video, data and voice to the ground and back to command centers from a variety of manned or unmanned aircraft, allowing them to see what obstacles may be ahead. Commercial SATCOM is the answer to the military's airborne ISR challenge.

Commercial partners can provide the security, support and bandwidth efficient technologies to help reduce costs, which will continue to be vital, especially in this austere budget environment.□

C4ISR & NETWORKS STATEMENT OF OWNERSHIP MANAGEMENT AND CIRCULATION REQUIRED BY ACT OF AUG. 12, 1970 (SECTION 3685, TITLE 39, U.S. CODE) AS OF OCTOBER 1, 2013

1. Name of Publication: C4ISR Journal
2. Publication Number: 1941-1286
3. Filing Date: October 1, 2013
4. Issue Frequency: Monthly
5. Number of Issues Published Annually: 10 issues
6. Annual Subscription Price: $55.00
7. Complete Mailing Address of Known Publication: Gannett Government Media Corporation, 6883 Commercial Drive, Springfield, VA 22159
8. Complete Mailing Address of Headquarters of General Business Office of Publisher: Gannett Government Media Corporation, 6883 Commercial Drive, Springfield, VA 22159
9. Names and Addresses of Publisher, Editor, Managing Editor are: Publisher, Elaine Howard; Editor, Barry Rosenberg; Managing Editor, Jack Wittman; all of the Gannett Government Media Corporation, 6883 Commercial Drive, Springfield, VA 22159
10. Owner (the corporation and stockholders holding one percent or more in total stock): Gannett Co., Inc., 7950 Jones Branch Drive, McLean, VA 22107
11. Not applicable
12. Not applicable
13. Publication title: C4ISR Journal
14. Date of Circulation Data: September, 2013
15. Following in the left-hand column is the average number of copies of each issue during the preceding 12 months, and in the right-hand column the actual number of copies of the single issue published nearest to the above filing date, in the categories shown:

	Average Issue	Sept 2013
Total Number of Copies (Net Press Run)	16,675	20,026
Paid or Requested Mail Subscriptions *(includes Advertiser's Proof Copies/Exchange Copies)*	8,751	7,917
Sales through Dealers and Carriers, Street Vendors and Counter Sales (not mailed)	253	253
Total Paid and/or Requested Circulation	9,004	8,170
Free Distribution by Mail *(Samples, Comps, and other Free)*	7,014	9,054
Free Distribution Outside the Mail *(Carrier or other means)*	300	2,050
Total Free Distribution	7,314	11,104
Total Distribution	16,318	19,274
Copies Not Distributed	357	752
Total	16,675	20,026
Percent Paid and/or Requested Circulation	55.2%	42.4%

I certify that all information is true and complete. Elaine Howard, President and CEO