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Air Force Report Outlines Threats to Satellite and Aerospace Industries

July 29, 2013 | *Satellite Today* | Steve Schuster



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Despite findings in a U.S. Air Force report revealing threats to the satellite industry, analysts contend the biggest threat may be partisan politics.

Image credit: Steve Schuster

[Satellite TODAY 7-29-13] Findings of a recent report by the U.S. Air Force reveal that satellites and the entire U.S. space enterprise system are currently at risk from increased space debris, extreme weather and cyber attacks. Additionally, the report outlined potential "game changers" for the U.S. satellite and space industry – but sparked questions from analysts.

"There are clear threats to the U.S. space enterprise, including growth in space debris, space weather induced upsets, the increasingly easy access to space, and potential cyber/EW (electric warfare)/kinetic attacks on our space and space-support ground assets," the June 21, 2013 report states.

The "Global Horizons" report was written by Mark Maybury who served as the Air Force's former chief scientist from Oct. 2010 to June 2013. Maybury, who now serves as Vice President/Chief Technology Officer at the MITRE Corporation, states that the space industry also faces other threats including "severe budgetary threats ... and programs-of-record that increase costs of space assets, while discouraging ... new advances in commercial technology."

"There was a need for the Air Force to identify revolutionary changes to mitigate vulnerabilities and help obtain a strategic advantage," Maybury said during an exclusive interview with *SatelliteTODAY.com*.

According to Air Force officials, Global Horizons was a study designed to look at the Air Force's core mission of "global vigilance, global reach and global power in the context of how global trends will affect those missions in the next 25 years." The study was created through a partnership among government entities, academia and private sector companies.

While Maybury's report raised a number of questions and identified several threats, industry consultants have said answers may be found on Capitol Hill.

"Congress can take the lead by mandating and funding programs that lead to disaggregation rather than continuing to fund large satellite systems," said Chris Quilty, senior vice president with **Raymond James** during an interview with *SatelliteTODAY.com*. "Generally speaking, the U.S. has put a lot of eggs in very few baskets and when you look at the limited number of missile warning communication satellites, weather satellites and even NRO satellites, an aggressor could severely disable and even degrade U.S. capabilities with only a handful of successful shoot downs of U.S. satellites."

Congress maintains it is committed to enhancing U.S. defense and protecting U.S. interests. "Any threat to space assets is taken very seriously. The [House Intelligence] Committee is aware of these issues and is working with the Air Force to address them," said House Intelligence Committee's ranking member C.A. Dutch Ruppersberger in an exclusive interview with *SatelliteTODAY.com*.

While U.S. Congress works with the Air Force to protect the country's interests, the Air Force report also outlined potential "game changers," for the U.S. satellite and space industry.

"Game changing approaches could make use of disaggregated systems and/or fractionated satellites to complement few, very large and highly capable legacy satellites to provide resilience, reduce vulnerability, and balance performance and cost effectiveness," the report said.

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In order to more efficiently explore smaller platforms, low-cost launch capabilities developed by the commercial satellite industry could provide "a new paradigm for accessing space," the report added, noting that new technologies, combined with autonomous space systems and ground control, "would revolutionize space operations."

But consultants are skeptical. "I think the game changing aspect of disaggregation may not be manifested in the actual capability of the satellites, instead of the way it impacts the industrial base," Quilty said.

Quilty also notes that while a higher volume of satellite production would of course create a more stable budget and production environments, new investment is the real key. "This increases efficiency and potentially the launch rate and thereby lowering overall launch costs due to higher overhead absorption. My view is that a move toward disaggregation will lead to potentially new areas of investment that were previously out of reach on the commercial side," he says.

Jay Gullish, director of space and telecommunications with **Futron Corporation** went even one step further. "I don't think anything they [the U.S. Air Force] are talking about is a game changer. Lowering the cost of launches, is that really a game changer? I don't see it. So if you shave off 20 percent of launch costs, how will that fundamentally change how space is utilized?" Gullish asked.

Maybury said while he thinks the analysts' comments were fair, he noted that "everyone has their own definition of game changers. Our definition included other sectors including operating and maintenance costs."

Maybury also defended the report stating that "the study was data driven and completed on a fact based analysis. Of course forecasting the future has a degree of uncertainty, but we think we had a pretty good projection of what to expect," he added.

As far as the threats the U.S. Air Force referenced in the report, Gullish noted that while EW (electronic warfare) may not be anything new, the technology and the threats have indeed increased. "A country like the U.S. could easily spend \$40 billion a year and an adversary could spend significantly less and diminish the value," Gullish said.

Specifically referencing an engagement in Iraq, Gullish recalled an instance when "the U.S. spent \$40 million on super expensive tanks and people were blowing them up for a cost of about \$20." He said the same analogy could be used with regard to threats to U.S. satellites and space.

Meanwhile, as U.S. lawmakers work with the Department of Defense to address these threats, "there has been a clear disconnect between cutting edge intelligence activity and legislators," Gullish said. "From a U.S. space policy perspective, there is this sort of waffling around Obama's announced policy that was well received but was not implemented," Gullish said.

The **Obama administration announced its new space policy initiatives** back in June of 2010 and several portions pertained to the advancement of satellite technology.

"The United States will accelerate the development of satellites to observe and study the Earth's environment, and conduct research programs," the White House said in a written statement.

Meanwhile, according to Gullish, the U.S. military and other government agencies have been generally supportive of Obama's space policy, which has yet to be implemented because of "bureaucratic complications."

"If you look at overall U.S. space policy, it's been flawed, not for lack of ideas but for implementation," he added.

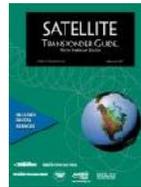
Noting that when Obama's space policy initiatives were first announced, "people were very excited; now it's just background noise. The United States has all of this capability in space. Foreign companies want to work with the U.S. and U.S. companies because we are the leader [in aerospace technology], but what you've seen is an increase in tempo on the national security side, not so much on the commercial, civilian and telecommunication side," Gullish said.

According to Gullish the biggest "threat" for commercial players both in the U.S. and abroad is not necessarily what was outlined in the U.S. Air Force report – it's partisan politics.

"How Obama's policies are being implemented is an uncomfortable question to answer. It's not really a surprise that within our [U.S.] political climate, there is a real lack of consensus of what we want to do. Where the rubber meets the road [policy getting implemented] is tactical not strategic," he added.

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