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## Integral CEO: Iridium Collision Will Establish New Precedents in Space Policy

By Jeffrey Hill

Integral Systems CEO John Higginbotham believes the collision of an Iridium commercial satellite with a defunct Russian military satellite on Feb. 10 was an event that will seriously test space industry conventions, theories, global diplomacy and legal issues for years to come.

The collision should bring calls for immediate prioritization and action on national and international levels, Higginbotham told Satellite News. "The time is now for the various space communities to come together in some fashion to sit down and address this issue," he said. "The satellite industry has never seen such a critical and complex event like this before."

Higginbotham, whose company manufactures the space awareness, telemetry and tracking systems used to manage and prevent space collisions, discussed the possible commercial, political and legal outcomes out of the incident and how he hopes that a deeper understanding of how liability conventions work in this industry will potentially lead to changes in the way the industry approaches the protection of its assets.

**Satellite News: What are the immediate effects of this collision on the industry as a whole?**

**Higginbotham:** The industry immediately realized that this was a catastrophic event for the entire industry, which absolutely legitimizes and verifies the critical need for improved space situational awareness. It directly relates to the need for monitoring and managing



the space environment. We realize that we simply cannot have this kind of thing happening in our industry. It is potentially devastating to future operations in space if we don't get this situation under control.

**Satellite News: What are some of the initial steps that the industry needs to take in addressing the seriousness of the collision?**

**Higginbotham:** The first thing we need to do is move out aggressively in getting

the capabilities in place to identify and track spacecraft and debris on a global basis. It sounds easy, but it is actually quite complex. The technologies do exist. We have been supplying a number of critical components to military and some commercial efforts to attempt to establish elements of this kind of structure. Integral, as well as a number of others in the industry, are trying to provide solutions in terms of being able to integrate and deliver systems that can actually address the issue. We

have the command and control, database management and telemetry capabilities as well as tracking and control services available to us now. But on a technical front, we need to move forward with some level of urgency on deploying these capabilities so that we can establish a higher degree of identification, tracking and management of space articles.

**Satellite News: If the technologies exist, what is holding this back?**

**Higginbotham:** We also need political will from both the national and international perspective. For all of this to work, priorities need to be raised in all space-faring nations in the world to enter into some sort of construct that allows us to share our data and conventions on how to manage space assets. We don't have either of those on a national or global basis right now. Clearly, there are domestic and global constituents that are attempting to contribute to the solution. The U.S. Air Force does great work in attempting to track space articles. The United Nations has a number of initiatives that aim to raise the cognizance of these issues with space-faring nations and the commercial operators and ad hoc user groups are trying to track things as best they can as well. The problem is, these are disparate efforts that need to come together on some kind of a coordinated national and international convention. We also need to coordinate this between military and commercial operators as well.

**Satellite News: What is the best solution to achieve this kind of coordination?**

**Higginbotham:** I think the most logical solution is a space version of the air traffic control system to achieve space situational awareness with a satellite control. That's what we don't have to avoid the kind of situation we've seen in the last week. Space traffic control is not a new concept. It is absolutely

the right kind of model. In order to accomplish that, we have to have the systems to be able to identify and analyze potential situations, as well as the impact, and then have ability to take some action in order to avoid this problem.

**Satellite News: Is the debris caused by the collision a matter of concern for the industry?**

**Higginbotham:** We still do not understand the full residual implications of the debris field involved and how it can affect other operations in low-earth orbit. It is a serious matter. It underscores that the debris issue is increasing at an increasing rate that can have adverse, long-term effects for our aspirations both militarily and commercially in space.

**Satellite News: This event happened just after the Obama administration called for a ban on space weapons to protect space assets. The Aerospace Industries Association also has called for more coordination of space efforts across government agencies. Since this has happened, have you seen a sense of urgency from the U.S. government to address this issue?**

**Higginbotham:** Yes, I have. The push to prioritize has been going on for the last year or two. On the military front, there is clearly cognizance of the need for improvement and there have been a number of initiatives underway over the last year or two to try to address the issue from a military perspective. In many ways, I think the military was out in front on this and concurring in the need to address these types of situations. On the civil front, there have been similar initiatives. We do have a civil structure in several governmental departments and I've seen plenty of good will coming from a number of national leadership institutions. But as far as this all coming together at a national priority across all the lines of government and an international

priority to handle the cross border and multi-national political issues — that hasn't happened yet.

**Satellite News: Do you think the prioritizing of space issues gets lost in the global economic crisis issue?**

**Higginbotham:** Space has certainly been on the government agenda, but yes, there is a question concerning priority its getting. I would submit that the events of last week would suggest that priority for addressing the solutions to this problem should be higher.

**Satellite News: In terms of multi-national political issues, how do you assess liability in this specific case where you have an operational commercial satellite from one country colliding with an inactive military satellite from another country?**

**Higginbotham:** We do have a unique situation here. A commercial spacecraft conjoining with a military satellite crosses a lot of boundaries here that are frankly untested. It's a very precedent-setting situation. There are liability conventions that have been in place under international treaty since the late 1950s that we can look to for some indication as to how to proceed. These conventions have been occasionally updated over the last 40 years. I'm not a lawyer, but there is going to be more than one Ph.D. on this by the time it is over. We do, at least, have a way to get started on that discussion on prior conventions that are now tested in the global marketplace.

**Satellite News: What do you think will be the outcome of these initial proceedings?**

**Higginbotham:** None of us in the industry are smart enough yet or understand enough yet to be able to predict what the outcome of those discussions will be. It will occur within a framework that has been defined for global operations in space for four or five decades. It is going to be a very interesting case.

