

## Expert: Satellite collision shows need for more regulation of 'space debris'

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Last week's collision between U.S. and Russian space satellites has prompted questions over who is at fault while highlighting the need for stronger international regulation of space debris, a University of Nebraska-Lincoln professor and internationally renowned space law expert said.

Frans von der Dunk said international agreements dictate that if a space object causes damage to the earth or to another spacecraft, the country that launched the object is liable. But the collision that took place Feb. 10 is the first known instance that two full-fledged space objects from different countries have crashed into one another in space.

The collision was between a commercial Iridium communications satellite and a defunct Russian satellite. The two objects slammed into each other over northern Siberia and created a cloud of wreckage -- "space debris" -- that officials worry could threaten other unmanned spacecraft.

"If the collision is between two space objects, as is the case here, reciprocal liability is to be based upon fault," von der Dunk said. The key question, though, will be what "fault" means in this context, when two full-fledged spacecraft simply collided, he said.

Von der Dunk said that will lead to a number of other legal questions that are emerging in the wake of the collision:

- \* Was Russia at fault because it allowed its satellite to fly around for more than a decade without any means to control its flight path?
- \* Was Iridium at fault because it had the actual station-keeping navigational capabilities that would have allowed it to stay clear from a collision course?
- \* Can Russia claim damages when its satellite had been defunct for more than a decade?
- \* Were either the United States or Russia able to foresee the serious risk of collision -- and if so, would either country's failure to act put them at fault?

Meanwhile, the crash unequivocally shows the need for further international regulation of space debris and the mitigation of its effects, von der Dunk said. When the Russian satellite became defunct in the 1990s, there was no international obligation on Russia to ensure the spacecraft would be properly moved out of harm's way, either into a junkyard orbit or downward to let the Earth's atmosphere burn the satellite.

"This, obviously, should change," von der Dunk said. While requirements are gradually being established for the responsible disposal of satellites no longer of practical use, that process has been very slow, he said.

"Hopefully, now that at least the first cow is out of the barn, the international community will become serious about the need to close the door."

Provided by University of Nebraska-Lincoln

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