

# USA-193: reboot problems

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U.S. NRO spy satellite may be total loss  
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By Andrea Shalal-Esa

WASHINGTON (Reuters) – U.S. officials are likely to declare a Lockheed Martin Corp. spy satellite a total loss after efforts to restore its ability to communicate failed repeatedly over the past three months, two defense officials told Reuters on Tuesday.

The experimental L-21 classified satellite, built for the National Reconnaissance Office (NRO) at a cost of hundreds of millions of dollars, was launched successfully on Dec. 14 but has been out of touch since reaching its low-earth orbit.

Limited data received from the satellite indicated that its on-board computer tried rebooting several times, but those efforts failed, said one official, who is knowledgeable about the program and spoke on condition of anonymity.

The satellite carried sophisticated cameras to take high-resolution pictures and test equipment intended for use on the broader Future Imagery Architecture (FIA) program, in which both Boeing Co. and Lockheed are involved.

Its failure raises questions about the schedule for the already-much-delayed FIA program, which was due to launch a first satellite in two to three years, analysts said.

One of the defense officials acknowledged the satellite's failure was "not helpful."

"It's part of an overarching architecture. When you're trying to move forward on several dimensions, it can't help accomplish those goals," the official said.

The other official said he expected schedule adjustments, but no major

delays, as a result of the NRO satellite failure.

"It might impact the schedule for introduction of new technologies," he added.

Another government official said he was unaware of any changes to the FIA program as a result of the satellite issue.

Lockheed, prime contractor for the experimental NRO satellite, declined to comment. The NRO, which designs, builds and operates reconnaissance satellites for the U.S. military and intelligence communities, also had no comment.

One of the defense officials said the issue with the satellite involved the computer that runs it, not the new sensors that it was meant to test.

"The failure has nothing to do with anything new. It happened with a set of components ... that historically is known to be good," said the official.

Jonathan McDowell, an astronomer with the Harvard- Smithsonian Center For Astrophysics, said the satellite's software problems raised questions about the adequacy of testing and oversight by the contractors and the Air Force.

"The question is why was this software failure not caught in ground test before launch," McDowell said, noting that oversight was particularly challenging in classified programs.

He said the satellite's software woes were reminiscent of those experienced by the Mars rover named Spirit, which was out of communication for more than two weeks after it landed on Mars in January 2004 because its flash disk kept filling up, prompting the computer system to crash repeatedly.

Engineers finally solved the problem by sending a command to the computer to clear the disk, enabling a successful rebooting of the system, he said.

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