

Anthony Serafini

From: Alex Shim <alex.shim@novawurks.com>
Sent: Tuesday, December 29, 2015 9:13 PM
To: Anthony Serafini
Cc: Karl Kensinger; Nnake Nweke
Subject: Re: Novawurks questions 12/23

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Here are the answers to your questions Tony.

1. Will the satellite be maneuvering in the vicinity of the Chinese space station altitude, or will the mission be over at that point?

NovaWurks is predicting a mean lifetime for SIMPL of 39 days and a best case of 128 days based on attitude control fluid consumption. During that time period a NASA analysis has predicted that SIMPL's altitude will vary between 350 to 425 km. Current TLE information for Tiangong shows an altitude variation between 387 to 402 km. So SIMPL may pass through Tiangong's altitude range while still active. However analysis shows the orbit planes of SIMPL and Tiangong are separated by 9 degrees in inclination and by over 50 degrees in rotation about the right ascension at the time of SIMPL's deployment. Despite similar altitudes, the angular separations of the orbit planes make any minimum distances between the two orbits very large and any vicinity occurrences between the objects highly unlikely (as supported by the NASA DAS program.)

2. Has Novawurks conducted any analysis regarding potential collision risks?

Novawurks conducted collision risk assessment using the NASA DAS program. Outputs are in section 7 of the ODAR. Result was negligible risk, a reported probability of 0.000000. Also specific AGI-STK analysis was conducted that shows a considerable amount of separation in orbit planes for Tiangong and SIMPL which supports the unlikely, negligible probability collision scenario between the two spacecraft. NovaWurks utilizes its Space-Track.org account and will register SIMPL with JSpOC upon deployment. This allows NovaWurks and the operators of any objects with which it has a potential conjunction to be warned via a JSpOC Conjunction Summary Message (CSM) and coordinate appropriately.

3. If Novawurks turns off the power, does this totally disable the satellite? Can it be turned off and back on again?

Once all power is commanded off, this totally disables the satellite. It cannot be turned back on again.

Hope this answers your questions.

Thanks and wishing you a happy new year!

Best Regards,
Alex.

Alex Shim

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On Wed, Dec 23, 2015 at 11:49 AM, Anthony Serafini <Anthony.Serafini@fcc.gov> wrote:

Alex

A couple questions

1. Will the satellite be maneuvering in the vicinity of the Chinese space station altitude, or will the mission be over at that point?
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Thanks

Tony