

Anthony Serafini

From: Nnake Nweke
Sent: Thursday, December 17, 2015 11:39 AM
To: Alex Shim
Cc: Karl Kensinger; Anthony Serafini
Subject: RE: Regarding STA 1177-EX-ST-2015 Dismissal

Alex,

This is to let you know that we have reviewed your email clarification below, and unfortunately, we are unable to reverse our dismissal of your experimental application for at least the following reasons:

1. The information filed with this application does not establish that **Novawurks** has adequate control of the satellite in order to address fault scenarios or any other need to intervene in automated operations. The availability of only a power on/power off command for purposes of meeting control requirements represents an extremely limited and inadequate capability under the circumstances, which involve use of a propulsion system.
2. Absent extremely unusual circumstances (typically involving no possible system faults), the application of force by a propulsion system, including to alter attitude, will necessarily alter the satellite orbit. Novawurks' assertions in this regard are inherently not well founded.

Please let me know if you have any questions or concerns.

Best Regards,
Nnake

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From: Alex Shim [mailto:alex.shim@novawurks.com]
Sent: Wednesday, December 09, 2015 3:34 PM
To: Nnake Nweke <Nnake.Nweke@fcc.gov>
Cc: Karl Kensinger <Karl.Kensinger@fcc.gov>; Anthony Serafini <Anthony.Serafini@fcc.gov>
Subject: Regarding STA 1177-EX-ST-2015 Dismissal

In response to correspondence sent 12/9/2015 Ref #30350 for file #1177-EX-ST-2015

Dr. Nweke,

Per the recent letter of dismissal in reference to STA 1177-EX-ST-2015 we believe there may be unintentional misunderstandings leading to a belief that the satellite is not safe, which we believe not to be true and would like to clarify:

1. Since SIMPL is an automated satellite, the 2 GHz radio was not a mission-required control link for operations but was a risk reduction test link for an experimental TT&C transponder on a future mission that was to be utilized on SIMPL for additional mission capabilities. The 2 GHz radio did however serve as one of two links (the other being QIKcom1) for positive on/off radio and power control.
2. The SIMPL satellite has no orbital maneuvering capability (e.g. raising and lowering the orbit), which is similar to most small satellites. Without this orbital maneuvering capability, it presents no deltaV hazard.
3. The satellite uses its fuel to maintain its automated sun-pointing attitude that does not require intervention by any communication system, again similar to most satellites in an automated standby or safe-hold mode. In fact as another measure of safety, an "attitude control thruster-on" failure analysis was performed for the ISS deployment approval authority which showed that failures only affect attitude and do not provide any orbital maneuvering capability.
4. All radio on/off and satellite on/off capabilities are under positive control by the omni-directional antenna on QIKcom1 so that all satellite attitudes do not pose any emission or safety hazards.

Please note that SIMPL was approved by the ISS program (Mission and Program Integration – MAPI) for activation and operations 30 minutes after deployment. The ISS considered SIMPL sufficiently safe to deploy it into a nearly identical orbit without fear of recontact or any other hazards. We respectfully request a discussion and re-review of the STA.

Best Regards,
Alex Shim

Alex Shim

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