

From: William Smith

To: Behnam Ghaffari

Date: June 30, 2020

Subject: FCC File No. 0910-EX-ST-2020

---

Message:

Hello Behnam Ghaffari,

Thank you for your response to our application for an STA. Below are updates to your items in your recent email.

1) I have edited the application to reflect the correct Iridium frequencies. I updated in three places. Please let me know if I have missed any other items.

2) This is my first time applying for an STA and, based on your request, I have now reached out to Iridium for processing a companion license. A colleague sent me a copy of an Iridium STA application for a previous, unrelated project. I have emailed the contact on that application to get information and will provide an update when I hear from them.

3) I refer to this application's attachment "KREPE FCC technical description". See the first figure (which I just realized is inadvertently listed as "Figure 2"). Our KREPE capsules are initially housed inside an RF-shielded housing. Software inhibits and the housing prevent any accidental transmission until the transport vehicle de-orbits and breaks up when it re-enters the atmosphere. The shielded housing should then be released and sensor data information will enable Iridium data transmission around 20 km altitude. The capsules should transmit about every 20 seconds and the total time they should be transmitting is a matter of minutes, until splashdown.

I may need some advice for documenting an "emergency termination" for our capsules. The RF-shielded housing prevents any transmission prior to release from the transport vehicle. Once sensors detect the re-entry and the housing has been released, the controllers in the capsules cycle power to the Iridium radios to enable transmission of data packets. The ultimate termination of the RF transmissions, functioning or malfunctioning, is controlled by the battery capacity. Our capsules are fairly small and the battery pack would drain fairly quickly in the event of rogue transmissions. It is also likely, but not guaranteed, that the impact on splashdown will destroy the capsule and terminate its functions. Would a document along the lines of something like these details suffice for answering your item 3)?

Thank you for your help in processing our application.

Regards - Bill Smith